

**ASSESSMENT AND
MODIFICATION OF SEXUAL PREFERENCE
IN CHILD MOLESTERS**

**A thesis submitted in fulfilment of the requirements
for the degree of
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in Psychology**

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ABSTRACT

Sexual preference has been identified as an important component in the motivational matrix of many sexual offenders against children. Deviant sexual cues or behaviours are understood to elicit maximal arousal in the offender, who then experiences a preference for these cues or for behaviour motivated by the stronger sexual arousal. This preference for sexual interaction with children is understood to be a learned phenomenon, and thus modifiable.

In recent years there has been a huge expansion in knowledge of the assessment and treatment of sexual offenders. One aspect of treatment is techniques designed to alter sexual preference. A number of procedures have been developed, but controlled outcome evaluations are sorely needed. The present study employed a combination of two techniques - directed masturbation and verbal satiation - and utilised phallometry to assess the degree of change. Three groups, each of ten child sex offenders, underwent phallometric assessments and treatment in a multiple base-line, across groups design.

Results suggest that directed masturbation, as conducted here, was not effective in enhancing the level of arousal of offenders towards adult stimuli. Verbal satiation however appears to have resulted in a significant reduction in arousal to deviant stimuli.

The use of repeated phallometric assessments with some participants in this study also permitted an investigation into the reliability of phallometric measurement. Results indicate, on the whole, that phallometry is a somewhat unreliable form of assessment with child sex offenders. Implications of these findings, with respect to the underlying theoretical assumptions of phallometry, are discussed.

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PART ONE

LITERATURE REVIEW

CHAPTER ONE

INTRODUCTION

The sexual abuse of children constitutes a serious problem in western societies. Depending on the definition of sexual assault and the population studied, prevalence rates for child sexual assault among women range up to 60% (Peters, Wyatt, & Finkelhor, 1986). The most reliable figures place the rate of serious sexual abuse of girls under the age of 14 at around 25% (Russell, 1983). A recent New Zealand survey of 3000 Otago women revealed that nearly 20% of women reported sexual abuse involving at least genital contact before the age of 16 years (Martin, Anderson, Mullen, Romans-Clarkson, O'Shea, & Phillips, 1992). Another 13% reported other incidents such as inappropriate touching or exposure. Other studies (e.g., Finkelhor, 1979; Risin & Koss, 1987) revealed also that a smaller, though still substantial, percentage of males are subjected to childhood sexual abuse.

Evidence exists in abundance to demonstrate that the costs of sexual abuse, particularly in terms of the psychological harm to victims, are extremely high. It is argued that the effects of sexual assault upon a child include "traumatic sexualisation" (the shaping of a child's sexuality in a developmentally inappropriate and interpersonally dysfunctional manner), a sense of betrayal, stigmatisation and powerlessness (Finkelhor & Browne, 1985). These traumagenic factors combine to create a psychological injury to the child victim, subsequently manifested in a range of emotional, behavioural and psychiatric problems. Furthermore, it is widely accepted that one of the common sequelae of childhood sexual abuse is the development of sexual problems in later life, which, particularly for male victims, may include the emergence of sexually aggressive tendencies (Dutton & Hart, 1992).

Finally, the financial costs to society, in responding to the problem through arrest and incarceration of offenders and offering a degree of assistance to victims, is substantial. In a study of the cost-effectiveness of offender rehabilitation, Prentky and Burgess (1990) calculated the monetary costs to the state of a single sexual offence. Included in the estimation were police investigation, trial costs, several years of incarceration and management on parole, plus services to the victim. These researchers came up with a figure of US\$183,000 for *each offence* for which an offender is convicted and sentenced.

Until relatively recently, sex offenders were considered by clinicians to be an "untreatable" population. More traditional interventions such as psychotherapy and psychodynamic group therapy had been tried, and abandoned (Becker & Hunter, 1992). The resulting pessimism contributed to the rise of the so-called "nothing works" doctrine (Martinson, 1974; Gendreau & Ross, 1987). This position gained acceptance amongst correctional authorities throughout the Western world, leading to widespread abandonment of treatment programmes and the adoption of lengthy sentences of incarceration as the preferred response to sexual offending (Furby, Weinrott, & Blackshaw, 1989).

The fundamental question of how many sex offenders continue to commit this type of crime after an initial conviction is difficult to answer. Reconviction statistics in New Zealand reveal that up to 25% of child sex offenders are returned to jail within five years for the same type of offence (McLean & Rush, 1990). Similar figures have been demonstrated in other countries - these include Australia (Broadhurst & Maller, 1992) and Canada (Rice, Quinsey, & Harris, 1991). However, in a thorough review of studies of this type, Furby et al. (1989) could not discern a clear trend overall. Research of this nature is of course fraught with difficulties. Reconviction is perhaps the only dependable indicator of re-offending, but rates of reporting by victims are

frequently very low (Martin et al., 1992), and only a proportion of reported cases lead to the conviction of an offender. It is likely that the incidence of both reporting, and the vigour with which such complaints are investigated and prosecuted, varies from both country to country and one time period to another. Other indices of re-offending (e.g., self-report) are considered so unreliable as to be of negligible value.

Nevertheless, clinical investigations have tended to support the notion that a substantial number of perpetrators of sexual abuse engage in persistent and highly repetitive offending. Abel, Becker, Cunningham-Rathner, Rouleau, Kaplan, and Reich (1984) found that the mean number of victims for heterosexual pedophiles (excluding incest offenders) in their sample was over 60 per offender.

Finite periods of imprisonment *per se* appear to achieve little in preventing further offending of this type. Short of imposing indefinite sentences on all such offenders (the financial costs of which alone are prohibitive, given that, in this country, several hundred such offenders are convicted each year [Spier, 1994]), alternate methods of reducing re-offending have been sought, giving rise to renewed efforts to develop effective psychological treatments. The debate over whether treatment of sex offenders can be effective has persisted. However, though the negative viewpoint continues to be articulated in some quarters (e.g., Quinsey, Rice, Harris, & Lalumiere, 1993), there is an emerging body of evidence suggesting that certain forms of psychological treatment can significantly reduce recidivism rates among offenders (Marshall, Jones, Ward, Johnston, & Barbaree, 1991). As a result, pessimistic attitudes towards offender rehabilitation have, more recently, given way to cautious optimism. This reversal has in large part been due to promising results demonstrated by cognitive-behavioural treatment programmes (e.g., Marshall & Barbaree, 1988).

Many modern programmes include within their array of treatment interventions

procedures designed to alter sexual arousal responses. These techniques have been developed in order to address a feature that appears common to many sexual offenders, that of deviant sexual preference. The role that sexual preference plays in motivating offending behaviour, and how such preferences might best be assessed and modified, is the primary focus of both the literature review below, and the research investigation that is described thereafter.

CHAPTER TWO

DEVIANT SEXUAL PREFERENCE

The Link with Sexual Offending

Adults who engage in sexual behaviour with children risk incurring punitive criminal sanctions, and severe social condemnation and ostracism. Why then would an otherwise rational adult male choose to behave in such a manner? One might reasonably deduce that powerful motivating forces must be operating. Over the years a number of hypotheses have been offered by clinicians and researchers concerning the nature of this motivational force. Perhaps holding pride of place among these is the notion of deviant sexual preference. From this perspective, the adult who interacts sexually with children does so because, as a class, *he finds children sexually arousing*. In other words, he becomes sexually aroused when thinking sexual thoughts about a child and/or when in close proximity to a child, and, in addition, the intensity of the sexual gratification he experiences when interacting sexually with a child is greater than, or at least equal to, the intensity of feeling he experiences when being sexual with an adult. Thus "afflicted" with this disposition, he is driven to seek opportunity to engage children in sexual activity, despite the risks to his own, and his potential victims', future.

Sexual preference is probably best understood as a different construct to that of sexual orientation. Useful in this regard is the framework of sexuality proposed by Martin Seligman (1994). Seligman suggested that sexuality in the human organism is best understood as having five distinct levels. The lower levels are the most fundamental, and the most resistant to change, while the highest levels are subject to

temporal instability, and problems at this level are readily changeable therapeutically. At the most profound level, Seligman identified sexual identity: the individual's subjective sense of being male or female. Transsexualism, of course, illustrates the paradoxical state in which identity is at odds with chromosomal and anatomic gender. To illustrate the fixed nature of one's sense of sexual identity, Seligman pointed out that in all of the scientific literature there has been just one account (Barlow, Abel, & Blanchard, 1977) of a successful therapy outcome in changing the sexual identity of a transsexual patient. The second level is that of sexual orientation: whether the person experiences sexual attraction to either same, or opposite-sex partners. This Seligman rated as only a little less resistant to change than sexual identity. The third level is that of sexual preference. Once orientation is dictated, it is argued, sexual preferences are elaborated around it. Preferences can be divided between the more normative varieties (for specific sexual acts - oral sex, intercourse, etc., - and for parts of the body - breasts, buttocks, etc.) and the paraphilias. Paraphilic preferences range from fetishes (e.g., rubber, shoes), sado-masochistic behaviours, and bestiality, to voyeurism, exhibitionism, pedophilia and, the most extreme, lust murder. Sexual preferences have their origins, he believes, in childhood and early adolescence. The level above preference is gender role behaviours: the extent to which a person behaves in a conventionally male or female role. Finally, the most superficial level is that of sexual function, or how adequately a person performs when with a suitable person in an erotic situation. The problems of function are of course the sexual dysfunctions (erectile disorders, anorgasmia, and so on). These conditions, Seligman claimed, are, within sexuality, the most malleable of all.

Thus, within this framework, pedophilic sexual interests are located on a continuum distinct from sexual orientation. Interestingly, Seligman goes on to express pessimism about the chances of successfully altering sexual preference also. Treatment, he believes, teaches sex offenders to restrain themselves from acting on

their wishes, thus bringing about change at the level of overt behaviour, but "what they *want* is largely unchanged" (p. 163).

The deviant sexual preference hypothesis of pedophilia has a persuasive logic to it. This has found recognition within American psychiatric nomenclature; in each successive edition up to the present (DSM-IV; American Psychiatric Association, 1994), the Diagnostic and Statistical Manual of psychiatric illnesses has classified pedophilia as a paraphilic behaviour solely on the basis of "recurrent, intense sexually arousing fantasies, sexual urges or behaviours involving sexual activity with a child": in short, on the basis of sexual preference.

Are child molesters sexually attracted to children? From the point of view of the self-report of many offenders, it does appear to be so. Clinical experience repeatedly bring clinicians into contact with child molesters who admit to potent feelings of sexual interest in children. These men report more subjective arousal to children than do normals (Haywood, Grossman, & Cavanaugh, 1990). They also typically disclose that their masturbatory fantasies centre on children. Other behaviours noted with offenders, such as taking or collecting photographs of nude children, and scanning their environment for child-related cues (e.g., TV programmes, brochures advertising children's clothing) tend to confirm that many indeed have a specific sexual preference for the immature physique.

Evidence from Phallometric Assessment

Simply asking offenders to describe their sexual interests is, however, in all probability an unreliable research strategy, as many people are understandably inclined to conceal such feelings if they have them. Fortuitously for those who were interested in investigating the phenomenon, male sexual arousal tends to be

associated with a most overt physiological response, namely penile tumescence, and it soon dawned on investigators that this response was eminently measurable. Thus ensued (from the early 1960s) intensive investigation in laboratory settings of the penile responses of offenders.

Under scientific scrutiny, the deviant sexual preference hypothesis has stood up reasonably well. Kurt Freund was one of the first to use the penile plethysmograph. His earliest work was apparently commissioned by the Czechoslovakian Government identify homosexuals in the military (O'Donohue & Letourneau, 1992). By presenting photographic slides of nude adults of both sexes to men while measuring changes in penile volume with a mechanical strain gauge, he demonstrated that it was possible to identify a man's sexual orientation. The penile responses of homosexual men could be readily differentiated from those of heterosexuals (Freund, 1963).

The utility of phallometry (as the procedure came to be known) in assessing sexual preference also quickly became apparent. When presented with stimuli (photographic slides) depicting children, pedophiles did in fact become sexually aroused (Freund, 1965). Not only did they show arousal, however, but their responses tended to be quite specific with respect to both the age and gender of the person depicted. Freund (1967) investigated the responses of three classes of pedophilic offenders. The results indicated that subjects' responses corresponded closely to their offence histories in regard to age and gender of victim, as well as to their own self-reported preferences. Later, Freund, Chan, and Coulthard (1979) correctly diagnosed 95% of their "admitter" group of adult male subjects as pedophilic (child) or hebephilic (teenage) offenders. Gene Abel and his co-workers introduced audiotaped stimulus materials (narrated descriptions of sexual interactions; Abel, Barlow, Blanchard, & Guild, 1977), which revealed differences between offenders not only in terms of the victim age and gender, but also in their

responses to specific types of sexual acts (for example, sexual violence).

Further, it was discovered that offenders could quite reliably be differentiated from non-offenders by way of phallometric response. Quinsey, Steinman, Bergersen, and Holmes (1975) and Quinsey and Chaplin (1988) found their child molesters had significantly larger penile circumference changes to child stimuli than did normal subjects.

Building on these findings, Barbaree and Marshall (1989) set out to identify specific "age preference profiles" amongst offenders by plotting the magnitude of erection response over age. They argued that five distinct profiles could be differentiated - profiles depicting relative preference for adults, adults and teens, children, children and adults, and non-discriminating (a failure to discriminate for age among possible partners). The adult profile (negligible arousal to children or young teenagers, but high arousal to adults) was characteristic of non-offenders; each of the other profiles tended to be more characteristic of sub-classes of offenders. The "teen-adult" profile was found with some child molesters and a proportion of non-offenders, the "child" and "child-adult" profiles were frequently found with child molesters, and the "non-discriminating profile" (roughly equivalent, but relatively low, levels of response across all age groups) was most typical of incest offenders. Barbaree and Marshall offered the opinion that the "child" profile (suggesting an absence of sexual interest in adults) might well be a feature of sexual offenders classed as more dangerous (i.e., posing a higher risk of re-offending).

In summary, it appears that to a large extent child molesters can be differentiated from normal controls, and can accurately be described as individuals who experience sexual arousal towards children.

Studies have also explored the issue of *predictive* validity (i.e., does a demonstrably

deviant response in the laboratory predict future deviant behaviour?). This is of paramount interest to clinicians, for the ability to identify high risk offenders offers major benefits in terms of informing clinical decisions such as allocation to treatment and readiness for paroles. In a community-based study, Barbaree and Marshall (1988) correctly predicted a negative outcome (i.e., recidivism) with 75% of their sample of untreated sex offenders on the basis of penile data. Maletzky (1990) reported on his 1 to 17 year follow-up of almost 4000 outpatient sex offenders. Almost three-fifths (58%) of his sample who evidenced high levels ($> 80\%$) of pre-treatment deviant arousal became treatment failures, while this pattern was in evidence in only 19% of treatment successes. Quinsey, Rice, & Harris (1995) recently reported on recidivism amongst their sample of 178 untreated sexual offenders (both rapists and child molesters), and found that phallometric indices of deviant sexual interest were not large ($r = .21$) but "useful" predictors of sexual recidivism.

The evidence implicating sexual preference in sexual offending against children is not unequivocal, however. For example, discriminant analysis of the phallometric data of incarcerated rapists, pedophiles and non-sex offenders revealed a misclassification rate of around 36% (Wormith, 1986). By no means do all child molesters demonstrate high levels of arousal in response to child stimuli (Barbaree & Marshall, 1989), and only a proportion exhibit an absence of arousal towards adult stimuli (Marshall & Eccles, 1991). Barbaree and Marshall (1989) also found that only 35% of their child molesters demonstrated an unequivocal "child" profile.

Significantly, the majority of intra-familial (or incest) offenders do not exhibit deviant arousal at all (Marshall, Barbaree, & Christophe, 1986; Quinsey, Chaplin, & Carrigan, 1979). Presumably the incest offender's behaviour must be understood by reference to other factors. Finally, significant arousal responses (i.e., greater than 30% of full erection) to deviant sexual stimuli are occasionally found with non-offenders,

although these responses are most likely to be towards pubescent female children (Marshall et al., 1986; Quinsey et al., 1975). Though the possibility cannot be ruled out that these supposed "normals" were in fact undetected offenders, it appears more likely that arousal to deviant stimuli is not unique to sexual offenders.

Cautions are, of course, appropriate with research of this nature. It should not be overlooked that, within the paradigm of phallometry, sexual deviance is necessarily operationalised as a penile response pattern elicited in a laboratory. O'Donohue and Letourneau (1992) have drawn attention to the multiple levels of inference inherent in this process. From the most basic and objective level (voltage changes recorded by the plethysmograph device), a series of inferential steps ensue: voltage changes are held to be representative of a penile response characteristic (tumescence), which in turn is held to be representative of sexual arousal. Sexual arousal is considered representative of sexual interest, sexual interest of sexual preference, and sexual preference is believed to manifest itself in sexual behaviour. Each of these steps in the chain of inference remains open to some questioning, however. Penile tumescence measurement is, as O'Donohue and Letourneau (1992) remind us, an assessment of penile response to erotica, rather than a measure of actual sexual behaviour in naturalistic sexual situations. Hence, simple arousal responses to deviant stimuli cannot be used conclusively to confirm sexual deviance at the level of overt behaviour. As a result of this awareness, attempts to misuse phallometric findings, for example for evidential purposes within a courtroom setting, have provoked justifiable condemnation from researchers (e.g., McConaghy, 1989).

Origins and Development

The question of how deviant sexual preferences might arise is an intriguing one. The idea that sexual arousal is subject to learning processes has been popular for some time. Kinsey argued that "apart from ... inherent capacities (necessary anatomy and physiological capacity to respond sexually) ... most other aspects of human sexual behaviour appear to be the product of learning and conditioning" (Kinsey, Pomeroy, & Martin, 1948, p. 66). Theorists from fields such as anthropology (Davenport, 1987) and sociology (DeLamater, 1987) have also argued that the range of permissible sexual interests and behaviours is learned through various social and cultural mechanisms.

Behavioural/learning perspectives on sexual behaviour vary in the extent to which they emphasise classical or operant conditioning and the mediation of cognitive variables (McConaghy, 1987; Skinner, 1969). One of the first applications of the classical conditioning hypothesis to pedophilic behaviour was made by McGuire, Carlisle, and Young (1965). The authors argued that the conditioned arousal response became established following a single early abnormal experience (or perhaps a series of such experiences), these experiences forming the basis of fantasies used in subsequent masturbation. The deviant fantasy, it was argued, became progressively more arousing through the unconditioned stimulus (UCS) of masturbation and orgasm being repeatedly associated with the conditioned stimulus (CS) of fantasy. Imperfect recall of the original scene produced "distortion and selection of cues" such that certain specific cues in the original experience became of increasing importance. In their paper McGuire and his colleagues offered the case histories of a number of their patients who exemplified the pattern of adult sexual deviation apparently having its origins in a salient sexual experience which was subsequently used as a masturbatory fantasy.

The paradigm within which this approach to sexual preference acquisition is located is that of classical, or Pavlovian, conditioning. Within this framework, masturbation (and other forms of direct stimulation of the genitalia, such as might occur during actual offence behaviour) are considered UCS, while sexual arousal and orgasm constitute the unconditioned response (UCR). Classical conditioning theory holds that the repeated presentation of a CS contemporaneously with an adequate UCS leads to the development of a conditioned response (CR). Fantasies and imagery that accompany sexual arousal are CS, and arousal that comes to be elicited by these CS are CRs. The CR of interest is the arousal response elicited by the CS of child sexual stimuli (hence, assessment of sexual preference using phallometry is understood to be achieved by presenting a range of CS, and measuring the strength of any CRs elicited by each).

The research evidence supporting the conditionability of sexual arousal is limited. Rachman (Rachman, 1966; Rachman & Hodgson, 1968) sought to explicate a conditioning model of sexual fetishism by pairing visual stimuli of pairs of black boots with slides of attractive nude women. Arousal was measured by penile plethysmograph. All of his subjects exhibited conditioned responding to a predetermined criterion, extinction of conditioned responding, and stimulus generalisation, thus providing evidence of conditioning. McConaghy (1967) utilised a similar procedure, this time presenting motion picture visual stimuli as UCS, and coloured geometric shapes as CS. Like Rachman, he also found that conditioned tumescent responding occurred to the CS. Similarly, Langevin and Martin (1975) found that penile tumescence occurred to conditioned stimuli, and that the conditioned response extinguished when the CS was subsequently presented alone for a number of trials.

However, each of these studies suffers from methodological problems. For example,

Rachman's subjects were aware of the purpose of the experiment (they were themselves psychologists), hence their own expectations, and the demand characteristics of the study, may have played a role in the results obtained. Other studies failed to test for unconditioned effects of the CS, did not control for backward conditioning, or failed to employ random control procedures. Further, in all of the studies, the magnitude of the conditioned response (if reported at all) tended to be rather weak (O'Donohue & Plaud, 1994).

There is another problem with the conditioning theory. Research (e.g., Kinsey, Pomeroy, & Martin, 1948) indicates that up to 37% of 11 year old boys have experienced sexual arousal (and a proportion of these, orgasm also) in same-age sex play with peers. Classical conditioning theory suggests that these experiences should exert a conditioning effect towards immature partners. The problem requiring explanation becomes why the vast majority of adolescents so readily move on to more adult partners (Howells, 1981).

Classical conditioning is not the only possible mechanism for the learned acquisition of sexual preference. For example, though the direct stimulation of the genitals is undoubtedly a UCS which may reflexively elicit the UCR of sexual arousal and orgasm, sexual arousal itself may be considered a potent sensory event, and thus a stimulus. As such, it might be argued that operant processes also offer an understanding of the emergence of deviant interests. Within this paradigm, the behaviour of fantasising about deviant sexual activity is seen as an operant behaviour which has been learned via repeated reinforcement with sexual arousal and orgasm.

Operant conditioning is almost certainly a factor in sexual offending *per se*. As Finkelhor (1984) pointed out, sexual approaches to children may be powerfully

reinforced by sexual arousal and orgasm, while punishing consequences such as being reported and arrested are, on the other hand, relatively unlikely. Less clear however is whether the penile response is modifiable under operant conditions. Studies which have evaluated this possibility include Quinn, Harbison, and McAllister (1970), who placed their water-deprived male homosexual on a schedule in which presentation of liquid was contingent on increases in penile tumescence to a slide of an adult female. Other researchers have used monetary rewards (Rosen, Shapiro, & Schwartz, 1975), being allowed to ejaculate (Schaefer & Colgan, 1977), and an unpleasant buzzing noise (Rosen & Kopel, 1977) as either the reinforcing or aversive stimulus. Though each of these studies claimed to have demonstrated operant reinforcement processes to be involved in penile responding, the methodology of each was such that classical conditioning effects could not be ruled out, or the effects of fatigue or habituation.

In their review of this literature, O'Donohue and Plaud (1994) commented that "despite the important roles that the notion of learned sexual behaviour has in contemporary theories of human sexuality, we conclude that although somewhat improved, our scientific information is still meagre" (p. 339). Whilst lamenting the methodological problems of many of the studies, O'Donohue and Plaud nevertheless conceded that there did appear to be "some evidence of the conditioning of male sexual arousal" (p. 341).

A variant of the conditioning etiology of sexual preference is that sexually abusive experiences in the offender's own childhood somehow create a learned preference for such activities. Several researchers have found childhood sexual victimisation to be more prevalent in the backgrounds of offenders than in various comparison groups (e.g., Groth, Hobson, & Gary, 1982; Seghorn, Prentky & Boucher, 1987; Dutton & Hart, 1992). This research may be suspect, however, as it is almost always

reliant on self-report alone, and sex offenders may be motivated to claim such experiences as a means of justifying their own abusive behaviour. It is difficult also to understand exactly how the experience exerts a conditioning effect. One might even predict that the childhood experience of being engaged in sexually arousing activity with an adult would lead to the emergence in adulthood of gerontophilic, rather than pedophilic, preferences. On the other hand, perhaps where the experience is deeply upsetting and frightening, an aversion to adult sexual contact might be created, perhaps encouraging the individual subsequently to seek sexual intimacy with partners who are younger and thereby less threatening.

Another mechanism whereby deviant sexual preference might be acquired is through child pornography. Tate (1992) reported on the massive extent of child pornography in the western world, which suggests that this material is widely consumed. Though no evidence is available to support this idea, it is possible that consumers of adult pornography may either happen upon child pornography, or seek it out for its novelty value, and gradually condition a sexual preference for children by repeatedly reading or viewing such material while masturbating.

It may be misleading to search for the origins of deviant sexual preference in order to explain the first instance of offending by an individual. More probable perhaps is that the development of deviant sexual preference *follows*, rather than precedes, the emergence of deviant sexual behaviour. The first incident may well be motivated by non-sexual factors. Then, because the consequences of the behaviour are highly reinforcing (in an operant sense), the offender repeats the behaviour, and thereby gradually acquires (in the classical sense) a sexual preference for the type of activity and partner.

Thus, the critical effect of sexual abuse (*vis a vis* the development of deviant sexual preference) might be non-sexual in nature. For example, the decisive variable might be *modelling* - the experience of having a model who finds children sexually stimulating (Howells, 1981). Seghorn et al., (1987) suggest the following mechanism: the at-risk child comes to identify emotional closeness or intimacy with adult-child sexual contact. He internalises such contact as an "ego-syntonic part of the self", and thus perpetuates the behaviour in an adult pattern of rationalised, self-justified victimisation of other at-risk children.

Money (1986) proposed a more elaborate explanation of how an abuse experience might give rise to the development of deviant sexual preference, in his theory of "lovemaps". A lovemap is defined as an individual's very specific template or cognitive representation depicting his (or her) idealized lover and idealized romantic, erotic relationship with this lover. The individual's masturbatory fantasies contain explicit representations of his or her lovemaps. Under normal conditions, Money argues, individuals develop lovemaps that are (a) heterosexual, (b) include sexual intercourse as the preferred sexual scenario, and (c) embody the view that love and eroticism are compatible. The primary condition necessary for normal lovemap development is where there is familial and cultural support for sexual rehearsal play in children who are reasonably close in age, and differing in gender. Under such conditions, Money argues, individuals will not develop paraphilic preferences. The condition most antithetical to the development of normal lovemaps is "the indoctrination of the child into the widespread view that the worlds of love and lust must be separate". The individual thus left with a "vandalised" lovemap may, depending on other factors, go on to develop hypophilia (e.g., anorgasmia), hyperphilia (or satyriasis) or paraphilia. Money uses a psychodynamic concept to specifically explain the emergence of pedophilia, that of "identification with the aggressor" (e.g., with a sexually abusing pedophile).

Finally, Howells (1981) offered an alternative explanation (which he acknowledged as highly speculative) for the emergence of deviant preferences. Noting that cognitive factors may play a role in the development of such feelings, he cites Schacter's (1964) model of emotion that suggested both perceptible physiological arousal and cognitive labelling (usually dependent on situational cues) were required for the experience of emotion. Howells commented that children typically elicit strong emotional reactions in adults, reactions normally labelled "parental", "protective" or "affectionate". Such feelings however might conceivably be labelled as sexual love "by some individuals in some situations", thus leading to sexual behaviour.

Other Theoretical Perspectives

Deviant sexual preference is of course one of many hypotheses examined in the quest to understand the motivations of sexual offenders. Where multiple variables have been combined into a more comprehensive theory of sexual offending, deviant sexual preference has usually been incorporated into these. What follows is a brief review of other theories; in passing, the ways in which they have integrated the sexual preference hypothesis is examined. The "four pre-conditions" framework proposed by David Finkelhor (1984) is here adopted for the purpose of classifying the theories reviewed.

Within this framework, the occurrence of an offence requires that certain pre-conditions be fulfilled. These include firstly the presence of an offender who is motivated to offend, and secondly that the offender overcomes his own inhibitions to committing such an act. The third pre-condition requires the circumvention by the offender of any external controls that might impede the occurrence of an offence, with the final condition being the overcoming of the resistance of the child. The latter three pre-conditions are together described as "disinhibition" factors.

In explicating the first pre-condition, offender motivation, Finkelhor mapped out three broad areas for consideration. These he termed emotional congruence, blockage, and sexual arousal. Emotional congruence referred to a dynamic whereby relating intimately to a child satisfied some important emotional need in the adult. Thus, theories in this domain explore possible *non-sexual* motivations of the offender. Under blockage are theories that focus on the ways in which an offender is unable to obtain adequate sexual and/or interpersonal fulfilment by conventional means and with same-age sexual partners. Sexual arousal theories of course tend to equate with the sexual preference hypothesis. In regard to the broad disinhibition domain, theories investigating this aspect of the offence chain centre upon the mechanisms involved in an offender's own personal controls over his impulses, through to situational, social and even cultural factors that serve to restrain - or facilitate - the occurrence of offending.

1. Psychodynamic theories.

As is common to other areas of psychology, the history of theorising about adult sexual interest in children began in psychoanalytic thought. Freud took considerable interest in sexual perversions, and though he rarely mentioned pedophilia, he sought to demonstrate that the roots of perversion lay in childhood sexuality (Freud, 1948). Deviant sexual behaviour in adults was held to represent failure of social conditioning to suppress perverse sexuality. He later added to this idea by introducing notions of regression to perverse sexuality, fixation at an infantile level, and the role of unresolved oedipal conflicts. For example, in the latter, the sexually perverse adult male was held to be unable to deal with adult heterosexuality because of castration fears.

More recent analytic approaches to perversions have been influenced by that

literature's greater emphasis on ego functions. In particular, important non-sexual components of perversions have been posited, most notably aggression and hostility. Stoller (1975), for example, paid particular attention to the perverse fantasy, attempting to explain how and why a particular fantasy acquired the capacity for intense gratification for that particular person. This, he argued, occurred because of the fantasy's capacity to serve as a scene of "symbolic mastery" over childhood traumas. Storr (1964) stressed more the sense of inferiority and related need for dominance that motivated the pedophile's interest in children, who became so much more attractive to him because they did not threaten him as much as other adults. Others (e.g., Fraser, 1976; Kraemer, 1976) have utilised the notion of narcissism to explain pedophilic interest. In this approach, as an unsuccessful outcome of the oedipal process, the male "remains in love with the child he then was ... he projects his love onto other children of a similar age to his lost child" (Fraser, 1976, p.20).

Thus the psychodynamic approach is very much of the "emotional congruence" variety; the assumption is that the offender is motivated by the peculiar emotional "meaning" that the child has for him. What this does not readily account for however is why this attraction should express itself in a specifically *sexual* manner. It is also noteworthy that offender treatment interventions predicated on these ideas have been singularly unsuccessful (Becker & Hunter, 1992).

2. Biological approaches.

Biological and genetic theories of pedophilia have also been proposed from time to time in the literature. The basis of these, presumably, is that the sex offender is a hypersexual individual who is compulsively driven to seek sexual gratification. This approach does not fit neatly into Finkelhor's framework: it has features of the sexual arousal domain, perhaps also fitting the category of disinhibition (given that the

offender here is presumably unable to restrain his impulses because of their intensity).

Hypersexual individuals undoubtedly do exist, although pedophilia is not necessarily associated with the condition. It may well be more common to rapists and even non-offenders, who presumably express their disorder by placing inordinate sexual demands upon their spouses and partners, by compulsive masturbation, or via anonymous adult-to-adult sexual encounters (Cooper, 1986).

Findings such as those of Berlin & Coyle (1981), who believed they had identified elevated testosterone levels in a substantial number of pedophiles, failed to find replication elsewhere. Again, it is difficult to postulate why raised hormonal levels should give rise to sexual interest specifically in children, something these authors themselves acknowledge.

3. Sociological perspectives.

Within a more sociological framework, two distinct approaches to understanding pedophilia have emerged. The first is a view which largely subsumes sexual abuse of children within the wider context of child abuse (i.e., physical and emotional abuse, and neglect). This perspective (e.g., Walters, 1975) emphasises the significance of family dysfunction and breakdown, socio-economic factors and social stress.

A second sociocultural perspective arose out of the women's movement and the radical feminist analysis of rape. Feminist theorists make the point that the overwhelming majority of sexual offenders are male, while the majority of victims are female, a finding which suggests that elements related to gender are critical in

understanding sexual aggression. The occurrence of sexual assaults on women and children are, according to feminist thought, a natural extension of the pervasive misogyny within Western culture. Herman (1990) criticised the psychological reformulation of rape as a pseudo-sexual act with its origins in the offender's "need for mastery, control and validation" (Groth & Birnbaum, 1979) as itself reinforcing socially conditioned "male prerogatives" that are linked with sexual aggression against females. She made the point that studies investigating the general psychological or psychiatric status of sexual offenders as a group support the conclusion that, on almost all indices, sexual offenders are not markedly abnormal. Severe psychopathology need not be invoked to understand the motives of offenders, she suggested: "normal socialisation is sufficient" (p. 182).

Extending this analysis to sexual assault upon children, Finkelhor (1982) has suggested that masculine socialisation in western cultures predisposes men to find children sexually attractive. Components of this socialisation include the tendency to confuse sexual and non-sexual forms of affection, the quest for sexual success as a means of confirming a sense of adequacy, the tendency to focus sexual interest upon specific acts and body parts to the exclusion of the wider relationship context, and the general male tendency to seek sexual intimacy with persons who are younger and smaller.

This approach to offenders appears to fit into two areas of Finkelhor's framework. The first is emotional congruence: the child is targeted for abuse because the abusive act has emotional meaning to the offender - it creates and reinforces feelings of power and dominance, the "payoff" which the (male) offender craves. Secondly, the feminist perspective emphasises the importance of social forces impinging on individual behaviour. Sociocultural values, such as the social disadvantage that women experience, reinforce and maintain patterns of abusive behaviour.

Interestingly, Herman (1990) attempted to deal with the question of sexual preference *per se* in her overall formulation. In acknowledging the fact that male children are also victims of abuse, a finding that is perhaps an anomaly for the feminist viewpoint, she claimed that the evidence supports the notion that offenders against male children have usually themselves been victims of childhood sexual abuse, and that this abuse experience creates a unique sexual preference for this type of activity. Sexual preference, she maintained, has little if anything to do with the abuse of females (adult or child).

These ideas undoubtedly add an important perspective to the problem of child sexual abuse. However, the fact that most men do not commit acts of rape or child molestation, and the existence of female sexual offenders (Allen, 1991), suggests that the feminist viewpoint is not sufficient in itself to account for sexually abusive behaviour.

4. The influence of interpersonal skill deficits.

Exemplifying the blockage approach, some researchers have investigated the social competence of offenders. The underlying assumption is that normal psychosocial development would enable a person to fulfil his sexual, social and emotional needs largely within adult-to-adult relationships. Clark and Lewis (1977) and Marshall, Christie, and Lanthier (1979) found evidence of markedly inferior social skills amongst sexual offenders. This deficiency, they concluded, prevents the offender from forming adequate relationships, resulting in social isolation and loneliness. This in turn motivates the offender to turn to children as a substitute form of attachment, as he finds them to be more accepting of him. An alternative perspective stresses the overwhelming social anxiety the offender experiences whenever in the company of potential adult partners. This type of offender becomes avoidant of intimate adult

contact, and is attracted to children because he finds them to be less anxiety-provoking. Studies have suggested that offenders are characterised by low self-esteem and loneliness (Kalichman & Henderson, 1981), are generally anxious (Vaillant & Blassutti, 1992) and less assertive than non-offenders (Overholser & Beck, 1986).

Marshall has elaborated on his earlier work by developing the link between problems in achieving intimacy and sexual offending (Marshall, 1989). In this thoughtful paper he reflected on his experience of consistently finding superficiality in the attachments of sex offenders, many of whom described themselves as having been "loners" all their lives. Such offenders also report that, though having sexual relationships with adult partners, these relationships are somehow unsatisfying to them. Marshall speculated that the essential difficulty is in the offender's lack of competence in achieving emotional intimacy, and that out of frustration, children are selected as pseudo-intimates, with whom sexual contact serves as an affirmation of the attachment bond.

Within this general perspective, the offender is not presumed to have a specific sexual preference for children, but to engage in sexual activity with a child only because he is unable to secure a satisfying sexual relationship with an adult partner. Once abusive behaviour commences though, the offender perhaps gradually acquires a conditioned sexual preference which is progressively reinforced with each successive occasion of offending.

A variant on the deviant sexual preference hypothesis is its functional opposite: the notion that an offender might be "blocked" from meeting his sexual needs with adult partners because he experiences no sexual attraction towards such partners. To recall Barbaree and Marshall's (1989) research, they found that more than a third of their offenders generated arousal profiles indicating minimal interest in sexual

partners over the age of 16 years. This finding clearly possesses additional explanatory power in providing an understanding of the motivations of some offenders. Low or absent levels of sexual arousal towards adult partners has been a somewhat neglected corollary to the deviant sexual preference hypothesis. If it is demonstrated that an offender has little sexual responsiveness towards adult partners, then it follows that he is probably at best poorly motivated towards, and at worst incapable of, meeting his sexual needs with such partners. This blockage in turn probably energizes whichever other latent sexual interests he may have.

5. Marshall and Barbaree's integrated theory.

Marshall and Barbaree (1990) have more recently proposed a general theory of the development of sexual deviance. Lamenting the narrow perspective taken by most researchers in the area, they argued that only when the diverse biological, psychological, childrearing, and sociocultural processes are viewed as functionally interdependent, will a proper understanding of sexual offenders be attained. Their theory plausibly synthesises a large number of research findings with offenders. In doing so, it locates sources of offence motivation within most of the domains set out by Finkelhor.

Marshall and Barbaree proceeded from the assumption that an individual's behaviour can be understood as the outcome of environmental conditions and learning exerting controlling influences on innately endowed dispositions. In explicating the development of sexual offending, they utilised findings from ethological research to suggest that the primary task for human males is the acquisition of inhibitory controls over a biologically determined propensity to fuse sex and aggression. Noting that the heritable nature of both sexual and aggressive behaviour in mammalian species is now widely accepted (Wilson, 1975), they raised the question of whether aggressive sexual tendencies might have some biological basis also. After all, the neural

substrate of aggression and sex is the same (mid-brain structures such as hypothalamus, septum, hippocampus etc), the same neural networks in these areas are involved, as are the same hormones (Adams, 1968; Hamburg & Trudeau, 1981; MacLean, 1962; Moyer, 1976; Valzelli, 1981).

Research (Money, 1965) also suggests that sex steroids have organisational and activational functions in both sexual and aggressive behaviour. Levels of these hormones increase dramatically with the onset of puberty - coinciding with increases in both types of behaviour in humans. Thus, biological factors present the growing male with dramatic changes which initiate strong desires to engage in sex and aggression. He must face the task of learning to appropriately separate out sexual drives from aggressive urges, and to inhibit aggression in the sexual context. His biological inheritance however makes these tasks a challenge. Marshall and Barbaree suggested that an individual with unusually high levels of sex steroids may find the task of acquiring constraints against sexual aggression all the more difficult. Here they offered the evidence of higher than normal testosterone levels found in violent rapists (Langevin, Bain, et al., 1984).

Puberty and the ensuing early years of adolescence thus form a "critical period" for the acquisition of behaviours expressing one's sexuality, and are also a time when enduring behavioural propensities develop. Environmental factors, it was argued, are critical in shaping the expression of sexual needs, and bringing aggression under control. The most potent of these environmental factors are likely to be childhood experiences within the home. Poor socialisation, and in particular violent parenting style, models and encourages the use of aggression for the young male, and disrupts his attempts to gain suitable controls over his aggressive and sexual impulses. These experiences are also likely to undermine his self-confidence and self-esteem, and give rise to feelings of resentment and hostility. Marshall and Barbaree quote evidence which supports the link between committing rape and prior physical abuse

as a child. Having an antisocial, aggressive and/or alcoholic father (Langevin et al., 1984) also appears to feature in the backgrounds of many such offenders. Children exposed to this type of learning tend to become adults who are insensitive to the feelings of others, and preoccupied with their own interests and needs.

Puberty and early adolescence are also critical times for the young person to acquire social skills. Under optimal conditions, the growing child has instilled a sense of self-confidence along with the desire and capacity for durable emotional attachments with others. Failure to develop these qualities may lead to the young male feeling "shut out" of romantic/sexual opportunities with same-age partners. The absence of strong and positive attachment bonds then causes him to experience emotional loneliness. Loneliness, Marshall and Barbaree argued, fuels a propensity towards hostility and aggression. Thus the failure to develop a capacity for intimacy results in aggressive behaviour, which in some cases becomes apparent within the sexual context. Patterns of engaging in impersonal sexual encounters may also increase the likelihood of sexual aggression. Child-sexual contact ensues perhaps because the young male, lacking competence with same-age partners, is motivated to "prove" his sexual adequacy.

In summary then, Marshall and Barbaree suggested that the young male inherits, as part of his biological endowment, a tendency to fuse sexual and aggressive urges. His task in puberty is to learn to appropriately separate out, and regulate, these drives. Poor family relationships and socialisation experiences disrupt the acquisition of these controls, as well as undermining his confidence, and provoking enduring feelings of resentment and hostility. He also enters adolescence with an inadequate capacity for intimacy: this leads to feelings of alienation and emotional loneliness, which in turn give rise to subsequent aggression and hostility. To pre-empt the criticism that an argument for biological capacity to enact certain behaviours *ipso facto* constitutes a justification for those same behaviours, Marshall and Barbaree

insisted that they do not argue this, but that biological endowment simply sets the stage for learning, thus providing possibilities rather than determining outcomes.

This theory attempts to offer a comprehensive explanation for why a person might become motivated to commit sexual offences. The research base upon which it rests has a number of inadequacies however. For example, although elevated testosterone has been found with some rapists, in this respect such offenders appear to have more in common with other violent offenders rather than with rapists as a whole (Bradford & McLean, 1984). Further, it is not particularly strong in accounting for the process whereby the motivational disposition is translated into sexually abusive behaviour with child victims.

In dealing with the specific issue of deviant sexual interests, Marshall and Barbaree adopt an unusual perspective on the role which fantasy about deviant sexual acts plays. They incorporate this aspect of offenders' behaviour into their framework by suggesting that deviant fantasies (of sexual aggression or sexual acts with children), rather than representing a specific sexual preference for this type of act or partner *per se*, function to "satisfy their (the offenders') need to see themselves as masculine". Thus, despite the extensive involvement of both authors in the assessment of the sexual arousal responses of offenders in clinical settings, they blend sexual preference into their overall framework in only the most peripheral manner, which is perhaps puzzling. Marshall had previously published findings demonstrating that rapists' arousal responses did not differ markedly from non-offenders (Blader & Marshall, 1989), perhaps indicating that Marshall and Barbaree do not consider sexual preference, as it is normally understood, important in explaining the motivations of the rape offender. The strong emphasis within the integrated theory on aggression as a core etiological concept probably means that the theory has more to say about the rape offender than it does about child molesters.

6. Pithers' relapse prevention model.

The relapse prevention (RP) model was adapted by William Pithers (Pithers, Marques, Gibat, & Marlatt, 1983) from the original work of Marlatt (Marlatt & Gordon, 1985) who applied it to the addictions field, particularly the treatment of alcoholics. The RP model attempts to locate within a specific sequential framework those influences, particularly ones temporally proximal to the actual offence, which combine to produce offending behaviour. The sequence is made up of a series of stages which successively move the person closer to the commission of an offence. Certain distal and proximal background factors motivate the offender into situations that afford opportunity ("high risk situations", or HRS) to be in proximity to potential victims. Once in such a situation, victim approach behaviours (or indeed simply fantasising about sexual contact) constitute a "lapse", which in turn may lead to an actual offence ("relapse").

In addition to these stages, the model posits a number of processes that mediate the transition between stages. "Seemingly irrelevant choices" (SIC) move the person into an HRS, feelings of sexual attraction and sexual urges (the "problem of immediate gratification", or PIG) are involved in moving the person from the HRS to a lapse, and the "abstinence violation effect" (AVE), a cognitive-affective reaction that diminishes the motivation to avoid re-offending, moves the person to ultimate relapse. These stages of the relapse sequence, it is argued, can be detected in most, if not all, sexual molestations.

Although Pithers accommodates the sexual preference hypothesis within his model, this is done more implicitly than explicitly. The model is probably best understood, from the perspective of Finkelhor's framework, as primarily a theory of disinhibition, rather than offence motivation. That is, it seeks to explicate intra-personal and

situational factors that undermine the controls an offender might have against committing offences. As such it functions as an account of how *re*-offending occurs, and tends simply to assume the motivation to offend. Thus, there is an implied acknowledgment that the offender might specifically desire children as sexual partners. The notion of the PIG is also partly dependent on the concept of sexual attraction to children, as is the "lapse", which, under some circumstances, can be defined as engaging in sexual fantasy about children.

7. Hall and Hirschman's quadripartite model.

Hall and Hirschman (1991) also have attempted to construct an etiological model of sexual aggression that takes into consideration the wide range of offender motivations and offence behaviours. They sought to identify "primary motivational precursors" of sexual assaults. Having reviewed earlier theoretical approaches, they commented that "an important theme that emerges ... is that various combinations of physiological, cognitive, affective and personality factors may be more or less prominent as motivational factors ..." (Hall & Hirschman, 1992, p.13). They suggested that these factors themselves (physiological, cognitive, affective and personality) may form a useful "quadripartite model" with utility in assessing, classifying, and appropriately treating, different types of sexual offenders. The suggestion is that each sub-type, based on the saliency of each of these four factors, has a relatively unique etiology, and thus different treatment requirements.

Hall and Hirschman identified "physiological sexual arousal" (which presumably equates with deviant sexual preference) as the primary motivational precursor of the first sub-type of offender. The offender of this type has a strong sexual attraction for the immature physique, and is motivated towards sexual interactions with minors, as such interactions afford maximal arousal. They drew the parallel between this type

and Nicholas Groth's "fixated" offender (Groth et al., 1982). Male children, they suggested, are the most likely targets of this type of pedophile.

The other sub-types are characterized, in turn, by cognitive motivational precursors (i.e., distorted beliefs and ideas that justify, rationalise or excuse the sexual predation), "negative affect states" (sexual aggression being a reaction to episodic life stresses) and developmentally-related personality disorder. Hall and Hirschman acknowledged that some offenders do not fit neatly into their typology, but argued that it is sufficiently comprehensive to provide an explanatory overview of the problem behaviour.

It is, however, questionable whether creating sub-types on the basis of these factors is valid. Clinical experience suggests that the average sexual offender exhibits a number of features from each of the four sub-types. Hall and Hirschman claimed, for example, that incest offenders are commonly "cognitively motivated", holding perceptions of children's behaviour that signal, in the offender's mind, readiness or desire to be involved in sex with him. However, cognitive distortions are found across the range of offenders, and may in fact be more pronounced with "fixated" offenders than with incest offenders. It is also difficult to accept the notion that cognitive distortions can function as a "primary motivational precursor" (Hall & Hirschman, 1992, p. 18) - that they function as *post hoc* rationalisations for unacceptable desires and behaviour seems far more plausible. Further, though less evident in incest offenders, there is no data to support the idea that offenders exhibiting deviant arousal share any other characteristic in common that would justify sub-typing these men around this finding alone. Deviant arousal is a feature of a diverse range of offenders, as are affective problems and personality disorder.

Indeed, the final type (the personality-disordered offender) might cynically be viewed

as simply a rag-bag category into which all cases not fitting the first three are consigned. The notion that sex offenders, or a proportion of them, exhibit a distinctive personality style has not been well-supported in the literature. Though some evidence exists that features such as introversion (Wilson & Cox, 1983) and dependence and passivity (Walters, 1987) tend to be more prevalent amongst groups of sexual offenders, other research, such as that using the MMPI, reveals a level of diversity that suggests this not to be a fruitful line of enquiry (Marshall & Hall, 1994). Hence, other than highlighting critical areas for assessment and intervention (much of which was already well-recognised), Hall and Hirschman's model appears to offer little to the present understanding of sexual offending.

8. Knight and Prentky's taxonomy.

Finally, another multivariate approach to understanding sexual aggression is the taxonomic system (known as the Massachusetts Treatment Centre Child Molester Typology, or MTC:CM3) developed by Knight and Prentky (Knight, 1988). Not really an etiological model as such, their approach posits a 2-axes, multi-step decision tree structure that generates up to 24 offender sub-types. Key dimensions of the system include offenders' social competence, the presence of expressive or instrumental aggression in carrying out the offence, and the "degree of fixation" (i.e., the extent to which children have been the focus of the offender's sexual and interpersonal involvement). Thus, in the latter, Knight and Prentky also explicitly incorporated deviant sexual preference into their framework, and accorded it a central position in differentiating classes of offender.

Though the authors argued that their system has important developmental and prognostic implications, little evidence is offered as to whether a specific sub-type does indeed have a unique etiology, or whether each sub-type, with its own

constellation of characteristics, benefits from a specific type of treatment.

Conclusion

It is apparent that a thorough understanding of the motivations of sexual offenders requires an accounting for a wide range of factors. Those individuals who engage in this type of behaviour form an extremely diverse group, with a vast range of potentially relevant characteristics in evidence. Theories differ in the relative emphasis placed on distal factors such as childhood experiences of abuse or neglect (Marshall and Barbaree's theory seems particularly strong in this respect), or on more proximal factors such as life stresses, offender beliefs, or situational factors (for which Pithers' RP model is very useful). However, to date most of the theorists, either implicitly or explicitly, have recognised the necessity of incorporating the notion of deviant sexual preference into their overall framework as an important factor explaining why a person would seek to interact sexually with a child. Its status as a core etiological concept in understanding (and treating) sexual offenders is unique.

CHAPTER THREE

PHALLOMETRIC ASSESSMENT OF SEXUAL PREFERENCE

Assessment Strategies

The recognition of the multifaceted nature of offence motivation has in turn given rise to acceptance that clinical assessment of sexual offenders must be similarly broad-focused and multidimensional. Assessment of sexual offenders typically focuses on two major domains: specific offence-related variables (including the offender's *modus operandi*), and the offender's current psychological and social functioning. These issues are summarised in Table 1.

Much of this data is of interest particularly for its utility in informing judgments about the likelihood of future serious offending (i.e., risk assessment). Though no attempt will be made here to review the sex offender risk assessment literature, various researchers have concluded that, for example, longer offence histories, psychopathic tendencies, and the use of force by the offender in committing the offence, are associated with increased risk of recidivism (for a review, see McGrath, 1991). Awareness of these factors assists clinicians in making judgments about which offenders should have priority for treatment resources or the need for secure custodial detention, as well as guiding treatment planning and evaluation. Importantly, the presence of deviant sexual arousal at pre-treatment assessment (Barbaree & Marshall, 1988; Quinsey et al., 1995) has also been identified as a significant risk indicator.

Phallometric assessment has tended to be the only assessment measure of sexual preference used within sex offender evaluation and treatment settings (Knopp, 1984).

Table 1
Assessment issues with sexual offenders

Domains	Issues	Procedures
Offence-specific data, <i>modus operandi</i> , etc.	nature of offender-victim relationship	previous reports and documents (Court, Probation, psychiatric, victim impact statements)
	age and gender of victim	
	nature of sexually abusive acts	clinical interview
	use of force/violence	reports from others (e.g., family)
	length of offending history, number of victims	
	victim "grooming" strategies	
	lifestyle factors	
Psychological and social functioning	personality characteristics, intellectual functioning	clinical interview
	attitudes and beliefs, cognitive distortions	psychometric measures (e.g., MCMI, Abel & Becker Cognitions Scale, Hostility towards Women Scale, WAIS-R)
	sexual preference, fantasies	
	history of substance abuse	phallometric assessment
	social competence, social anxiety	behavioural observation (e.g., in treatment group, prison environment)
	mood management skills	
	sexual knowledge	medical examination
	presence of other paraphilias	

Apart from self-report, the only other available methods include psychometric questionnaires such as the Wilson Sex Fantasy Questionnaire (Wilson, 1978) and card-sort techniques (Barlow, Leitenberg, & Agras, 1969). However, these measures do not offer much advantage over - and neither are they more valid than - simply asking the person to state whether, and to what extent, he engages in sexual fantasy about children.

The concept of sexual arousal may benefit from definition at this point. Bancroft (1983) has proposed that sexual arousal has four components. The first is sexual drive, which he defines as the motivation to act sexually, and the general level of sexual responsiveness or arousability. The second, central arousal, refers to the state of alertness in the brain when attention is focused on the sensations of sexual stimulation. Thirdly, there are genital responses, in particular those reactions to erotic stimulation. Finally, there is peripheral arousal, which includes bodily responses such as sweating, trembling, changes to heart rate and breathing, and the like.

It is probably the case that, at any one time, sexual arousal does not necessarily involve all of these processes. Further, when subjective and physiological sexual arousal are monitored simultaneously, these variables may not correlate particularly closely (Hall, Binik, & Tomasso, 1985). It is also undoubtedly true that certain of these processes are more readily measured than others. There is no easy way, for instance, that sexual drive can be assessed, perhaps other than by inferences drawn from overt behaviour. Genital and peripheral arousal are however readily "measurable" responses.

Zuckerman's (1971) authoritative article on the use of physiological measures considered all of the sympathetic activational features of sexual arousal.

Electrodermal reactions (Solymon & Beck, 1967), cardiovascular changes (Wood & Obrist, 1968), respiration (Wenger, Averill, & Smith, 1968), temperature (Corman, 1968), pupillary response (Hess, 1968) and evoked cortical response (Lifshitz, 1966) have each been evaluated in the assessment of sexual interest. Though all such responses were demonstrably associated with sexual arousal, the problem with all, however, was *specificity*. Unfortunately, the kinds of peripheral responses that occur during sexual arousal were also observed at times of non-sexual arousal (e.g., orienting to novelty, emotions of fear, anger). The genital response has in its favour the fact that it is unlikely to occur except during arousal that is specifically sexual in nature. Thus Zuckerman concluded that penile erection had been proven to be "the most sensitive index of arousal in the male" (p. 326).

Since that review was published a novel non-phallometric technique has been reported in the literature that employed EEG data to detect the presence of sexual interests (Howard, Longmore, & Mason, 1992). These researchers suggested that a phenomenon known as contingent negative variation (CNV), defined as "a slow negative-going shift in the resting potential of the human brain occurring while the individual anticipates a meaningful stimulus", could be used to identify "sexual object preference" in sex offenders. This work remains very much at the experimental stage at this time.

Methodological Issues in Phallometry

In reviewing phallometry, its attendant methodological issues are first discussed, followed by a consideration of the issue of reliability. O'Donohue and Letourneau (1992) recently reviewed the test and measurement paradigm of phallometry. They lamented the lack of standardisation in the conduct of such assessments.

Standardised protocols for penile tumescence assessment have been proposed at

times (e.g., Laws & Osborn, 1983), but are adhered to only occasionally. In reading the literature where sexual arousal assessments are reported, a wide range of procedures, materials and devices are reported. As O'Donohue and Letourneau point out, any one of these variants may exert an effect on the psychometric properties of the assessment.

Table 2 lists the ways in which phallometric assessments might vary from one setting to the next. A number of these issues are discussed below in greater detail.

1. Phallometric measurement devices.

Phallometric measures are obtained using a device which the client attaches to his penis. Three kinds are in existence, two types which measure circumference change only, and the third, a volumetric device, which in effect measures both length and circumference changes. The mercury-in-rubber gauge and the metal strain gauge are circumferential types. Studies have compared these various measures, with conflicting results. The volumetric and circumferential devices do not correlate particularly highly. Remarkably, even the two circumferential devices yielded different data in one study (Laws, 1977). Various findings have emerged which favour volumetric devices, though primarily because of their increased sensitivity to lengthwise changes in the penis (which can occur independently of diameter changes). Earls and Marshall (1983) found that lengthwise increases occurred simultaneously with a *decrease* in diameter during the early phase of the erection response. It should also be noted that volumetric *and* circumferential devices may both be inadequate in assessing the full range of the arousal response. Farkas, Evans, Sine, Eifert, Wittlieb, and Vogelmann-Sine (1979) found that diameter and length changes frequently reached a plateau while tumescence, as measured by *angle*, continued to increase.

Table 2
Sources of procedural variation in phallometric assessment

Assessment features	Variations
type of penile gauge used	<i>mechanical, mercury-in rubber, volumetric</i>
transducer placement	<i>base, mid-point, around frenum</i>
type of stimuli used	<i>fantasy, audio-tape, slide, videotape, combination</i>
content of stimuli used	<i>e.g., differences in models</i>
duration of stimulus presentations	<i>7 sec. - over 4 minutes</i>
length of inter-stimulus interval	<i>fixed time vs return to base-line</i>
nature of stimulus categories sampled	<i>e.g., Tanner scale vs age scales</i>
number of categories and of stimuli used for each category	-
instructions to subjects	<i>e.g., instruction to imagine a sexual interaction with the target vs no instruction</i>
Whether a warm-up is used, and number of assessment sessions	-
Type of recording equipment used	<i>e.g., computer-generated graphs vs strip-chart recorders</i>
Whether calibration was used to correct for any non-linear characteristics of recording	-
Data sampling rate	<i>e.g., every 5 secs vs every minute</i>
Whether methods were used to control for faking	-
Gender and other characteristics of the evaluator	-
Type of data transformation	<i>e.g., z-score, percentage of full erection, ratio scores</i>
Characteristics of the laboratory	<i>e.g., degree of privacy</i>
Type of client sample, and setting	<i>e.g., out-patient, prison</i>

Source: O'Donohue, W.T. & Letourneau, E. (1992). The psychometric properties of the penile tumescence assessment of child molesters. Journal of Psychopathology and Behavioral Assessment, 14, p. 126.

Volumetric devices are considerably more difficult to use, and more expensive. Despite the shortcomings of the mercury-in-rubber strain gauge, it is currently the most widely used device in this type of assessment (Pithers & Laws, 1988).

2. Stimulus materials.

Phallometry utilises various forms of erotic stimuli in order to generate sexual arousal in the laboratory. Typically these include printed pictures or photographic slides (e.g., Quinsey et al., 1975), videotapes or movies (Abel, Becker, Blanchard, & Djenderedjian, 1978), erotic prose, the participant's own sexual fantasies (Koukounas & Over, 1993), or audiotaped narratives (Marshall, Barbaree, & Christophe, 1986). Not infrequently a combination of modalities (particularly slides and accompanying audiotapes) is used (e.g., Alford, Morin, Atkins, & Schoen, 1987). A few studies have evaluated the comparative impact of modalities; some data exists to demonstrate that videotaped material is more potent in eliciting arousal, though sometimes this can blur the difference in responding between offender and non-offender populations (Abel, Becker, Blanchard, & Djenderedjian, 1978).

Of concern in this regard is the possibility that some pedophiles may be aroused only by child sexual stimuli which are defined by highly specific developmental aspects. Thus, ideally a wide range of stimuli in each age and gender class are presented. The same argument applies to issues of consent and violence, in regard to which offenders may have greater or lesser arousal. However, the desire to present a broad range of stimuli must be balanced against practical considerations such as the drawbacks of an overly long and arduous assessment. It is generally accepted, as a minimum requirement, that the stimulus array in phallometric assessments should include both genders and a range of ages. It is also preferable that various types of sexual acts are depicted (e.g., fondling, oral stimulation, intercourse) as well as

variations along the dimension of compliance and coercion (Pithers & Laws, 1988).

3. Duration of exposure to stimulus material.

Duration of exposure to stimulus material may be an important factor in the accurate assessment of sexual preferences, given that strength of penile response may be influenced by how long a subject is exposed to the stimulus material. Clients may not achieve levels of arousal indicative of their true interests if given insufficient exposure. A review of the research literature suggests that duration of presentations varies widely. Freund (1967) presented his slides for seven seconds only, while Avery-Clark and Laws' (1984) audiotaped descriptions of sexual activity were of five minutes duration. It appears that a balance must be achieved that is not overly brief, but is not so long as to give subjects time to modify their responses. A presentation of around two minutes would appear to be most favoured by clinicians working in this area.

4. Scoring procedures.

There are a number of ways in which a penile response can be quantified. The amount of change from base-line can either be represented in terms of millimetres of "stretch", or as a percentage of the full erection response. Either of these data forms may then be converted to a ratio index of deviant arousal, calculated by dividing the arousal score from deviant material (e.g., the response exhibited to a depiction of sexual interaction with an 8 year old girl) by the score obtained from appropriate material (e.g., consenting sex with an adult female). Ratios rising above 1.0 indicate increasing levels of exclusivity of sexual preference towards children.

A review of a sample of 51 articles published in the literature between 1965 and 1994

(each of which employed phallometry in the assessment of sexual arousal) reveals that 25 studies employed percentage of full erection as the outcome measure, 25 used millimetre deflection, and one employed a combination of the two. No general superiority for any of the scoring methods has yet been demonstrated; it appears that researchers and clinicians have simply opted for whichever they had a preference. Eccles, Marshall and Barbaree (1988) suggested that ratios might offer an advantage when repeated measures are required, as these scores tended to remain stable over time in the face of any decline in absolute levels of responding (this issue will be discussed in greater detail below in the section addressing reliability).

In the majority of published studies (36), individual response scores within classes of stimulus were averaged. Most typically a mean was obtained from the peaks of arousal recorded for each stimulus in one class (e.g., pubescent female). Occasionally, the mean of the entire response for each stimulus presentation was utilised. To illustrate, the mean of an individual response can be achieved by sampling the subject's response level every 5 seconds over the course of the stimulus presentation, then averaging these figures for each class of stimuli.

Wormith (1986) has argued that the research evidence supports use of the peak of the full erection figure over mean level of response. Firstly, the two measures are highly correlated: Quinsey and Harris (1976) and Abel, Blanchard, Murphy, Becker and Djenderedjian, (1981) and Koukounas and Over (1993) all found coefficients ranging between 0.86 and 0.95. Peak scores should however be favoured however, Wormith claimed, on the grounds that the peak score shows greater sensitivity to treatment-induced changes, and because of its relative simplicity. Mean scores are subject to variables such as latency and duration of response, which may render comparisons more problematic. Laws and Osborn (1983), in an authoritative chapter offering guidelines on the conduct of phallometric assessment, explicitly

recommended averaging the peak responses within each deviant and non-deviant category.

A small number of the studies reviewed used child-adult ratios to represent the responses of subjects (Baxter, Marshall, Barbaree, Davidson, & Malcolm, 1984; Murphy, Haynes, Stalgaitis, & Flanagan, 1986; Serin, Malcolm, Khanna, & Barbaree, 1994). In the context of research with rapists, Abel, Becker, Blanchard, and Djenderedjian (1978) argued that ratio scores (obtained by dividing the rapist's percent full erection score to rape stimuli by the percent full erection to consenting sexual stimuli) were effective in distinguishing high frequency rapists from low frequency rapists and non-rapists. However, a major problem with ratio scores is their non-linearity: non-deviant scores greater than deviant scores result in ratios that range between zero and one; where non-deviant scores are lower, ratios potentially can range from 1.0 to infinity.

Finally, case studies published in the literature typically present data graphically and without further statistical manipulation, with the shape of the curve serving to demonstrate the subject's response during an individual session (Laws & Holmen, 1978; Farkas et al., 1979; Quinn, Harbison, & McAllister, 1970).

Some researchers have chosen to transform the raw magnitude-of-change data (either percentage or millimetre deflection scores) to z-scores. Quinsey, Chaplin, and Upfold (1984) advocated the use of z-score transformations to control for individual differences in responsivity to stimuli. Earls, Quinsey, and Constonguay (1987) subsequently published a study which purported to show that z-score transformations were superior to other methods in accounting for the variance captured by each data set. They also suggested that the use of z-score transformations obviated the need to have subjects achieve full erection (a

requirement necessary for the transformation to percentage of full erection).

However, a number of researchers have contested this view. Barbaree and Mewhort (1994) analyzed sexual arousal data and found that z-scores distorted the information contained in the individual subject's raw scores, and that, over a group of subjects, this distortion served to increase the relative proportion of random error. The superiority that Earls, Quinsey, and Constonguay (1987) claimed for z-scores turned out to be apparent primarily with tasks such as differentiating between groups of offenders. They also argue that z-score transformations (which Earls et al. believed also increased the power of statistical hypothesis testing, and thus reduced the risk of Type II errors) artificially reduced the calculated error variance in hypothesis testing, and thereby increased the risk of Type I errors. Hall, Proctor, and Nelson (1988) also pointed out that large differences produced by z-scores for subjects with limited variance in their responses between stimuli are merely artifactual. The logic of the procedure becomes particularly problematic when comparing one individual's data with that of others.

Murphy, Haynes, Stalgaitis and Flanagan (1986) gained data from assessments of a large number of offenders whom they subdivided into four categories (homosexual and heterosexual pedophiles, incest offenders, and "mixed"). Their primary interest was in determining whether differences in response profiles could be detected between these categories of offender. They subjected their data to different scoring methods (percentage of full erection, ratios, and z-scores) and concluded that the results were similarly successful, irrespective of the scoring methods employed.

The one other stated advantage of z-scores use, that it removes the need for the subject to achieve full erection, is clearly only an issue when having subjects achieve

full erection is itself problematic. Experience suggests that this is seldom the case, that outside of a small proportion of offenders who are impotent or subject to situationally-determined erectile difficulties, the majority of clients are readily able to achieve full erection. When this is done at the commencement of the session, the process of gaining full erection can usefully serve as a kind of warm-up session, can reassure the assessor that the subject is potentially responsive sexually, and can permit individualising of the full range of the client's response.

Earls (1988) acknowledged that z-scores may not always offer an advantage, but argued that they should be adopted for procedural standardisation within the research literature. It would appear however that this plea has largely been ignored; from the time that his paper was published, studies have continued to appear (e.g., Serin et al., 1994) utilising data forms other than z-scores. Insofar as standardisation has occurred, it appears to be that of percentage of full erection.

A final consideration is the ways in which arousal responses are organised for analysis in terms of stimulus category. The most common subdivision used by researchers is to present scores for "child" and "adult" responses (or "deviant" versus "non-deviant"). Occasionally, a third dimension, that of coercion versus consensual sexual interaction, is included. However, some authors have utilised finer distinctions in data analysis by introducing subdivisions of both adult and child responses, usually by introducing either gender divisions and/or age brackets. Freund, for example (Freund, 1967, Freund, Chan, & Coulthard, 1979) has published studies in which scores were presented for adult, teenage and child stimuli in both male and female categories. Quinsey et al., (1975) also presented their data in this manner. However, it is arguable that this level of specificity is unnecessarily fine-grained, given that gender of arousal is somewhat superfluous. More recently, those studies that have elaborated beyond the simple deviant/non-deviant distinction have tended

to do so by reference to age subcategorization alone: adult, teenage (occasionally referred to as hebephilic) and child (or pedophilic). Alford, Morin, Atkins and Schoen, (1987), Barbaree and Marshall (1989), and Quinsey et al., (1979) are examples of this trend.

5. Reliability.

Reliability is a critical issue in phallometry, and must be demonstrated before any claims for the validity of the procedure can be countenanced. Phallometric assessment assumes to measure a stable trait-like propensity to become aroused to a specific class of stimuli. It further assumes that an individual's arousal pattern is sufficiently stable across time for his sexual preferences to be determined (and future activity predicted). The issue of reliability testing is one of ascertaining the extent to which phallometry consistently and dependably measures an aspect of an individual's sexual functioning - hopefully, his sexual preferences. Measurement error occurs when differences in responses are due to factors that are unrelated to the purpose of measurement (O'Donohue & Letourneau, 1992).

Reliability of arousal measures is particularly salient where repeated assessments of deviant arousal are made over the course of treatment, as is the case in most treatment programmes, and where the post-treatment assessment is used as part of the evaluation of risk and dispositional planning.

The concept of reliability is potentially confounded by the phenomenon known as habituation. Habituation is understood to occur when there is a reduction in response level when the same stimulus is repeatedly presented, the reduction not being attributable to neural adaptation or fatigue (Koukounas & Over, 1993). Reductions in response magnitude over time might validly be viewed as evidence for

the unreliability of phallometry. Such findings may however alternately be viewed as evidence for response habituation - although, of course, habituation of this type is itself a source of unreliability.

Studies which address the issue of reliability are relatively few, which is surprising given its critical importance to the paradigm of phallometry. Frenzel and Lang (1989) investigated consistency of responding to erotic stimuli by presenting stimuli three times over a single session. This study is notable for its large number of participants ($n = 191$) and the fact that they were grouped according to sexual orientation and offending status - heterosexual intra- and extra-familial sex offenders and non-offending controls, and homosexual extra-familial offenders. These researchers found a high reliability coefficient (.93) for the 27 stimuli, demonstrating, they believed, "satisfactory internal consistency".

On the other hand Reifler, Howard, Lipton, Liptzin, and Widman (1971) reported decrements in response levels in experimental subjects exposed to 90 minute sessions involving an erotic film presented 5 days per week for 3 weeks, compared to controls. Similarly, Schaefer and Colgan (1977) found penile response decrements using six presentations of sexual stimuli over a two-week period. Farkas and Rosen (1976) found decrements in responding over an even shorter period of 4 experimental sessions. These two studies (each conducted with non-offenders) suggest significant within- and between-session changes in responding to sexual stimuli.

Many of these papers have interpreted the changes found in terms of habituation. Koukounas and Over (1993) offered evidence to support their notion that habituation is a function of a decreasing "absorption" of the subject in the stimulus; by absorption is meant the degree to which the person experiences himself to be a participant in the depicted sexual encounter, rather than a spectator.

In a study that more closely approximated clinical practice, Farkas, Evans, Sine, Eifert, Wittlieb, and Vogelmann-Sine (1979) presented sexual stimuli twice, a week apart. They reported adequate reliability ($r = 0.75$) for maximum circumferential response. Interestingly, they also explored the consistency of basal (i.e., unaroused) measurement; this showed an even higher correlation ($r = 0.94$). However as Eccles, Marshall and Barbaree (1988) have pointed out, the test-retest interval is much shorter than would normally occur in a treatment setting. This limits the applicability of such findings to the question of whether treatment changes can reliably be measured from repeated measures. Additionally, such applicability is further diminished by the use of a non-clinical population in these studies: men with established deviant sexual preferences may well respond differently to university students.

In an investigation of the arousal responses of rapists, Krisak, Murphy, and Stalgaitis (1981) reported a 6-month test-retest of a "rape index" (responses to forced sex divided by responses to consenting sex). They found lower coefficients ($r = 0.43$) than those of Farkas et al., (1979). Davidson and Malcolm (1985) also report simple test-retest reliabilities with 90 incarcerated sex offenders ($r = 0.52$ and 0.65 respectively for mean and peak erections) but only two presentations and variable test-retest interval (48 hours to over 1 month) reduce the value of this study.

Sensing that ratio scores might offer some control over habituation effects, Eccles, Marshall and Barbaree (1988) conducted a study with male university students who were presented with two classes of stimuli (heterosexual and lesbian videos), a combination that Eccles et al. hoped might allow the determination of a ratio score analogous to the rape index. They found the predicted decrement in response levels across repeated assessments, but that ratios of relative arousal did remain stable.

Reliability can also be assessed by use of different but theoretically equivalent

measurement forms (O'Donohue & Letourneau, 1992). Day, Miner, Sturgeon and Murphy (1989) exposed their subjects to a formidable array of 96 stimuli, some of which were slides, others videotapes of adult-child sexual encounters, and the remainder audiotaped vignettes. Stimuli were categorised according to type of sexual interaction (fondling, intercourse), as well as along a continuum of coercion (i.e., consenting versus non-consenting). Offenders' phallometric scores were converted into a composite score by taking each subject's mean arousal to stimuli across different stimulus modalities. Results indicated high reliability of responses to stimuli within categories. Finally, Wormith's (1986) study investigated both test-retest and parallel forms reliability of phallometry, with a sample of 36 offenders (rapists, child molesters and non-sex offenders). With regard to test-retest, assessment sessions were spaced one week apart, and Wormith reported reasonably high correlations for child stimuli (.83 for female slides, .75 for male). Interestingly enough, correlations for adult stimuli were somewhat lower (e.g., .50 for female). Parallel forms testing generated coefficients that varied from .53 to .92.

Thus the evidence supporting the reliability of phallometry is not unequivocal, with a number of studies revealing quite disparate response levels when the same stimuli are repeatedly presented. Clearly, habituation of responding is a major factor in accounting for some of this inconsistency. However, the potential sources of variability in arousal responses are probably endless - time since last orgasm, the presence of drugs or alcohol, attentional changes, mood, motivational level, changes to general health - all may have an impact on an individual's responses at any given time (O'Donohue & Letourneau, 1992). Overall, while there is probably sufficient evidence available to consider phallometry reasonably reliable in assessing the sexual preferences of child sex offenders, there remains an urgent need for further systematic study of the issue.

Interestingly, stability of repeated measures using ratio scores (deviant arousal

divided by non-deviant adult arousal) with child molesters has not been examined empirically. Ratio scores are of course a useful device where repeated measures are used, as they offer control for habituation effects. This lack is an significant omission, considering the importance of such findings in relation to treatment outcome assessment and dispositional planning.

6. Faking.

Faking of responses is a major threat to reliability (and to validity also). Laws and Rubin (1969) were the first to demonstrate that males are capable of inhibiting their erection responses when asked to do so. Numerous additional studies have subsequently appeared that confirm this finding (Avery-Clark & Laws, 1984; Freund, Watson, & Rienzo, 1988; Hall, Proctor, & Nelson, 1988). It is now generally accepted that erectile responses can both be suppressed or artificially increased in order to simulate a non-deviant arousal profile. The means whereby voluntary control is achieved include both cognitive (e.g., selective inattention or by engaging in a mentally demanding task; Geer & Fuhr, 1976) and physiological processes (e.g., muscular contractions). Non-deviant arousal responses can be falsely generated by the person engaging in deviant fantasy (Quinsey & Bergersen, 1976) or masturbating when the adult stimulus arrays are presented (Laws & Holmen, 1978). Some studies (e.g., Freund et al., 1988) have shown that faking of age preference is more readily achieved than is gender preference, and that subjects are more successful in voluntarily suppressing deviant arousal than they are in generating arousal to appropriate but non-preferred age targets. It has also been shown that repeated testing may enable subjects to fake more readily, because of their increased familiarity with the test procedures and stimuli (Wormith, 1986), thus providing them with opportunities to practice controlling arousal (Earls & Marshall, 1983).

Attempts have been made to identify signs of faking and strategies for circumventing

it. For example, video monitoring (of the upper body and face) allows a degree of control over averting of eye gaze and attempts to manipulate either penis or gauge. Quinsey and Chaplin (1988) reported a procedure in which subjects were required to engage in a tracking task during stimulus presentations (pressing different buttons when sexual or aggressive themes were portrayed). However, strategies such as these have in the main achieved only limited success, and some have been counter-productive. Henson and Rubin (1971) explored whether having their subjects provide an ongoing verbal description of the sexual stimuli might control for the direction of their attention; however, the resulting arousal responses were markedly lower than when the subjects had been asked to simply watch the material. At this stage, there are no generally accepted procedures for either detection or prevention of faking.

Conclusion

There are a number of problems inherent in the use of phallometry as the measure of sexual preference: a failure to exhibit an erectile response to a specific stimulus cannot reliably be taken to indicate a lack of sexual interest; a person who demonstrates deviant arousal on one occasion may not exhibit the same response when reassessed at a later time; and one stimulus modality might generate arousal in one person but not another. However, despite these and other difficulties, it must nevertheless be acknowledged that direct measurement of sexual arousal to actual sexual stimuli is certain to hold more promise than indirect measures such as global personality testing or from self-report (O'Donohue & Letourneau, 1992).

Consequently, penile tumescence measurement techniques are probably, at this stage, "the best we have got" for investigating the sexual preference component of sexual offending against children.

CHAPTER FOUR

TREATMENT OF DEVIANT SEXUAL PREFERENCE

Non-behavioural treatments

Over the last 35 years a number of techniques have been developed to normalize patterns of sexual arousal of pedophiles. Though the vast majority of these are based on behavioural principles, alternative approaches exist.

1. Surgical castration.

Though not designed to exert a specific effect on deviant sexual arousal *per se*, castration of sexual offenders has been performed as a treatment since the early 1900s. Denmark was the pioneer country in legalizing castration in 1929, and a number of other European countries followed suit in the years after. The widespread misuse of castration in Germany between 1934 and 1944 precipitated a kind of therapeutic abstinence from the practice for a decade or so after the War, but by the mid-1950s psychiatrists in several countries were again arguing the advantages of the procedure. The rationale appeared to be based on the notion that sexual offenders were hypersexual individuals, unable to control their excessive sex drives. By castration, with consequent loss of testicular sex hormones, a cessation of sexual interest and loss of capacity to respond sexually was expected.

There are a small number of published studies providing outcome data following this form of treatment. These were reviewed in 1979 by Heim and Hirsch. Though noting that offenders appeared considerably less likely to re-offend after being castrated (rates varied from 1.6% to 10.8%), these reviewers highlighted major methodological flaws with each of the published studies. They also pointed out the

rationale for castration was weak, given that *hypo*sexuality appeared to be the case for many sexual offenders. They concluded with the comment that therapists advocating castration appeared to them to be acting less from a concern for their patients than from "archaic feelings of revenge". Today, few clinicians would endorse the appropriateness of castration for sexual offenders, and the procedure has largely fallen into disrepute.

2. Pharmacological treatment.

Another non-behavioural treatment of deviant sexual preference is pharmacological intervention. Pinta (1978) administered medroxy-progesterone (MPA, a progestin with anti-androgen activity) and found a drastic reduction in pedophilic fantasies. However, it was also apparent that all sexual desires were inhibited by the drug. Cooper (1981) conducted a placebo-controlled trial using cyproterone acetate (CPA) with nine offenders and obtained a similar result. On the other hand, Bradford and Pawlak (1987) reported on the treatment (with CPA) of a sadistic homosexual pedophile. They found a differential reduction in pedophilic sexual arousal with markedly less effect on adult arousal. It appears however that no replications of this finding have yet been published.

Behavioural Approaches

Most of the earliest studies reported in the literature using behavioural techniques were conducted with male homosexuals troubled by their sexual orientation. Though some successes were claimed, arguments have been made (e.g., Davison & Wilson, 1974) that clients confused and distressed about their sexual orientation are not suitable subjects for this type of research. Interventions with homosexual clients currently tend to be considered inappropriate, given the assumption of pathology that

treatment implies. More importantly, as has been argued above, sexual orientation is not synonymous with sexual preference. The evidence indicates that sexual orientation is established early in life, and is extremely resistant to change (Harry, 1985; Seligman, 1994).

Applied to the treatment of pedophiles has been the full range of behavioural interventions. Most of these have specifically targeted deviant sexual preferences rather than low arousal to adults, although many of the procedures involve both responses. The bulk of this research shares in common certain theoretical assumptions. These include the notion that deviant sexual behaviour is motivated by sexual preferences for the type of behaviour exhibited or characteristics of the victim, and that these preferences can reliably be inferred from penile responses measured in a laboratory setting. Further, it is assumed that treatment interventions that alter these penile responses also have the effect of reducing the likelihood that the individual will engage in further deviant sexual behaviour in the future.

1. Aversive procedures.

There is a plethora of studies (mainly case studies) which report positively on the use of electrical aversion therapy, where electric shock is contingent upon the subject's sexual arousal to deviant stimuli (e.g., Hallam & Rachman, 1972; Marshall & McKnight, 1975; Wolfe & Marino, 1975). However, in an uncontrolled group study with five subjects, Quinsey, Bergersen and Steinman (1976) found only small positive shifts in sexual preference after 20 sessions of aversion therapy. Marshall (1979) also found that while electrical aversion therapy decreased self-ratings of deviant arousal, no effect on physiological responses was observed. Quinsey, Chaplin and Carrigan (1980) observed more significant changes only after they added biofeedback (coloured lights indicating a criterion penile response) and signalled

punishment. Of interest however is an outcome study (Rice, Quinsey, & Harris, 1991) of 50 extra-familial child molesters treated by the method described by Quinsey, Chaplin et al. They found such treatment made no difference to recidivism rates when treated and untreated offenders were compared.

More recently, aversive forms of treatment have fallen into relative disuse: this has not occurred solely because of a perceived lack of efficacy, but at least as much because of the public controversy these procedures invariably provoke (W.L. Marshall, personal communication, 1989). Insofar as aversive techniques continue to be used, they now more typically utilise aversive *imagery* as the punishing stimulus - a procedure known as covert sensitization. Barlow, Leitenberg, and Agras (1969) were the first to employ this approach. They had their pedophilic subject pair aversive scenes (e.g., feeling nauseous, vomiting) imaginally with his deviant fantasies. Using frequency of urges as the dependent measure, these authors considered their data demonstrated the effectiveness of covert sensitization. Brownell, Hayes, and Barlow (1977) treated five subjects with a similar procedure. Using phallometric and self-report measures of arousal, they also reported satisfactory outcomes. Levin, Barry, Gambaro, Wolfensohn and Smith (1977) found that the variations of covert sensitization that were most effective were those that used psychosocial imagery such as capture by the police, imprisonment, and so on. Maletzky (1980) augmented aversive imagery with aversive odours, with his sample of 100 male patients, a mixed group of pedophiles and exhibitionists. Treatment sessions occurred weekly for a total of 24 weeks. Phallometric data revealed significant decreases in penile responses following treatment. No control group was employed however.

More recently, Weinrott and Riggan (1991) developed a variation of this technique for use with adolescent offenders. They used professionally made video vignettes,

portraying juvenile perpetrators contending with negative social, emotional, physical and legal consequences of their offences. These were shown to offenders immediately after they had been exposed to audiotaped scenarios designed to evoke arousal to a child victim. A total of 249 trials (i.e., pairings) was conducted in 20 sessions over 10 weeks. Treated subjects showed a significant decrease in arousal to children (as measured by phallometry), compared with a matched control group.

Procedures employing other aversive stimuli have also been trialed, including noxious auditory feedback (Keltner, 1977) and noxious odours (Hunt, 1985). Marshall has recommended the practice of released offenders carrying with them a vial of smelling salts to use as a self-administered punisher to interrupt deviant thoughts (Marshall, Hudson, & Ward, 1992). Finally there is one reported account of the use of shame as the aversive stimulus (Serber, 1970). The latter had the pedophile act out his deviant behaviour on a (consenting) young secretary in the presence of a number of observers - reportedly to good effect.

2. Masturbatory techniques: Deviant arousal.

In attempting to redirect sexual interest away from socially unacceptable cues, current clinical practice has tended to favour reconditioning techniques which employ masturbation (Laws & Marshall, 1991). A number of such techniques have been described in the literature, the majority of which are single case studies. Of these, one in particular directly targets deviant arousal: masturbatory satiation (other techniques will be discussed below under the section headed Adult Arousal).

Masturbatory satiation has been formulated on the operant principle that the continuous and unrewarded repetition of a behaviour leads to an extinguishing of that behaviour (Laws and Marshall, 1991). When applied to deviant sexual preference,

this requires the continuous repetition of deviant sexual fantasies and related behaviour (masturbation) during extended periods when the person is not sexually aroused. Because the behaviour does not elicit reinforcement (arousal and orgasm), extinction of response occurs. The tendency to engage in deviant fantasy, or to become aroused by such fantasies, is reduced or eliminated. This theoretical formulation, which has inadequacies, will be discussed in greater detail below.

Marshall and Lippens (1977) were the first to apply this principle to masturbatory reconditioning. Their technique had the client masturbate to orgasm using whatever fantasy he desired (typically a deviant fantasy), then required him continue to masturbate while verbalising his deviant fantasies for an extended period of time, up to a full hour. To ensure treatment compliance, these verbalizations were either listened to by the therapist in an adjoining room or were recorded by the client and later checked by the therapist.

In a number of subsequent single-case studies Marshall and his colleagues reported positive effects from this procedure. Marshall and Barbaree (1978) treated a pedophile/fetishist client in a multiple base-line design, with satiation being applied sequentially to female children aged 6-8 years, female children aged 11-13 years, an underwear fetish and finally a shoe fetish. Repeated erectile measures of arousal clearly demonstrated a specific treatment effect over the various specific preferences by the sequentially applied satiation procedure.

Subsequently, Abel, Becker, Cunningham-Rathner, Rouleau, Kaplan, and Reich (1984) modified the satiation procedure by shortening the satiation period and also introducing directed masturbation (see below) into the pre-orgasmic phase. Self-report data from their child molester sample indicated "a marked decrease in urges". Alford, Morin, Atkins, and Schoen (1987) also used this technique with a pedophile.

They repeatedly assessed their subject, via phallometry, in a multiple baseline/across classes of stimuli design. The subject was required to masturbate to orgasm whilst exposed to a normative adult female slide and accompanying audiotape, then to repeat this behaviour while avoiding any fantasy. Finally, he masturbated for one hour in the presence of deviant slides and tapes. The data suggested that, following treatment (16 sessions), arousal to deviant stimuli was markedly reduced. These researchers had hoped to demonstrate a differential treatment effect in responding as a function of the staged introduction of pedophilic versus hebephilic material, but this did not occur. Both responses appeared to be highly interdependent, as they diminished in tandem after the masturbatory extinction procedure was commenced using pedophilic stimuli.

Abel and his co-workers (Abel et al., 1984) suggested that, in order to ensure compliance with the directed masturbatory component of the procedure, clients should be instructed to verbalise and tape-record their fantasies, and that, furthermore, they should use liberal quantities of lubricant for masturbation, so that the tape recording could pick up the sound of this activity.

W.L. Marshall (personal communication, 1989) expressed the opinion that having the subject actually masturbate himself during the post-orgasmic phase may not be at all necessary, in that simply verbalising deviant fantasy alone, while unaroused, ought achieve the desired effect. The advantage of "verbal satiation" (as it has been termed) over masturbatory satiation is a decreased probability of potentially the greatest threat to the success of this approach, namely, client resistance to performing the technique (Laws & Marshall, 1991).

As a further measure to improve the probability of subject compliance, Laws, Osborn, Avery-Clark, O'Neil, and Crawford (1987) shortened the satiation period to 20

minutes in treating their child sex offender subjects. They reported that this amendment to the procedure did not lead to a loss of treatment potency, as all of their subjects achieved a satisfactory decrease in deviant arousal. The researchers, however, did not provide detailed data supporting these changes.

Hunter and Goodwin (1992) recently reported using verbal satiation to deviant fantasies with adolescent offenders against children. These researchers had their 39 subjects practise the technique without masturbating at all, apparently because they considered it unethical to require adolescents to masturbate to deviant fantasies (this is puzzling, as it appears they were unaware of the modifications that Marshall, Abel and others had made to the technique since it was first described). Consequently, because the client was not refractory to sexual arousal, the technique required long practice periods (60 minutes) to ensure the necessary state of boredom. Though reporting a favourable outcome, the results of this study are difficult to interpret as there was no control group, and the satiation treatment was conducted concurrently with a number of other treatment modalities.

3. Other procedures.

McConaghy, Blaszczyński and Kidson (1988) report on the use of "imaginal desensitization" (ID) with a range of paraphilias, including 15 pedophiles (their study either combined, or compared, this treatment with concurrent administration of MPA). ID required the subject to learn a relaxation response, and then to visualize being in the situation where he had carried out the anomalous sexual behaviour in the past, but to visualize not completing the behaviour, while remaining relaxed. Though reporting mixed outcomes, this study is perhaps of added interest because of the hypothetical basis upon which ID was used: that paraphilic behaviours are driven by a sense of tension and excitement that becomes aversive if the person doesn't

complete the behaviour. ID acts "to reduce the subject's level of arousal, so that failure to complete the behaviour no longer provokes such an uncontrollable sense of tension" (p. 200).

It may be that cognitive treatments are also useful in diminishing deviant arousal. Edwards (1972) successfully combined assertiveness training with thought-stopping techniques to diminish a subject's preoccupation with pedophilic fantasies. Though yet to be subjected to controlled evaluation, one might speculate that empathy training and cognitive restructuring, procedures designed to encourage offender acknowledgement of the harmfulness to victims of their deviant behaviour, could exert some effect on deviant sexual arousal.

4. Assessment of treatment outcome with deviant arousal.

In the above literature, the reporting of treatment outcome is typically done in one of two ways. Pre- and post-treatment arousal responses are simply graphed to represent the treatment effect (e.g., Alford et al., 1987), or the effect is expressed in terms of a statistically significant difference between pre- and post-treatment scores (e.g., Marshall & Lippens, 1977). Seldom however have researchers used the principle of a cut-off score, in the sense of a point above and below which a score is held to be either "deviant" or "non-deviant". This is relevant to the issue of classification discussed earlier, but equally to evaluation of treatment outcome: at which level does a post-treatment score signify a positive treatment outcome? In the absence of normative data, where cut-off scores have been proposed they are necessarily set arbitrarily. Baxter et al., (1984) and Laws and Osborn (1983) each recommend a 20% cut-off score, while others (e.g., Abel & Blanchard, 1976) argued for a more stringent criterion - 10%. This figure has been used more recently to differentiate alleged child molesters from normals (Haywood et al., (1990). Although at one time arguing that scores as low as 10% could meaningfully be interpreted

(Earls & Marshall, 1983), W.L. Marshall (personal communication, 1989) has more recently offered the opinion that it is probably unsafe to interpret any score below 30% as signifying sexual interest, given the degree to which minor fluctuations in penile responding occur throughout an assessment.

Potentially useful in this regard is the work of Jacobson and Revensdorf (Jacobson, Follette, & Revensdorf, 1984; Jacobson & Revensdorf, 1988). These researchers have proposed a statistical formula for determining whether the effects of psychological treatment found in a particular study are clinically meaningful. Jacobson & Revensdorf operationalised "recovery" (i.e., a clinically meaningful treatment outcome) as a post-test score that was more likely to belong in the functional rather than dysfunctional population. The cut-off is the point at which the subject is equally likely to be a member of either functional or dysfunctional populations. Such a formula requires that the distributions of both are normal, and the variance equal. It also requires adequate norms on the criterion variable. When these conditions cannot be fulfilled (as is the case with many clinical problems) it is recommended that, using data from the dysfunctional population, the subject must (to be declared "cured") end up two standard deviations in the direction of functionality beyond the mean of the dysfunctional population, by the time therapy is over. By this logic, a subject who is two standard deviations beyond the mean of the dysfunctional population is unlikely ($p < .05$) to be dysfunctional to the extent that dysfunction is reasonably equated with or represented by the mean of that distribution.

Unfortunately, though there are several studies demonstrating reliable differences between offenders and matched non-offenders in respect of arousal responses, this work has not even begun to approach the level of consistency or rigour necessary to develop normative data that would enable comparisons between treated and untreated offenders populations. Secondly, little is known about the distribution and variances of either non-offender and offender populations in regard to sexual arousal

responses. Further work towards achieving these goals would thus be exceedingly worthwhile. In the meantime, using the 2 SD rule to determine clinical significance is potentially a useful device.

5. Masturbatory techniques: Adult arousal.

In addition to techniques designed to reduce deviant sexual arousal, effort has also been expended to increase the level of responding by offenders to adult stimuli. The enhancement of the adult-orientated sexual arousal response is clearly an important treatment goal in its own right.

The first attempts to utilise the powerful conditioning effects of orgasm were reported by Marquis (1970), who treated a range of sexual deviations (including one pedophile) with a technique he called thematic shift. The essence of the procedure was the pairing of appropriate sexual fantasy with orgasm. Thus, the client (Marquis included three women in his sample) was instructed to masturbate, using deviant fantasies if necessary, to the point of ejaculatory (or orgasmic) inevitability. At that point, the client switched from the deviant fantasy to an appropriate heterosexual fantasy. Subsequently, over the course of repeated treatment sessions, the non-deviant fantasy was gradually introduced earlier in the course of masturbation, ultimately to the point that deviant fantasy was eliminated. In terms of outcome, Marquis simply reported that twelve of his fourteen subjects were either "much improved" or "cured".

Marshall (1973) treated twelve patients with a variety of deviations (five pedophiles) by a combination of Marquis' technique and aversion therapy (electric shock contingent on deviant fantasy). Phallometric measures taken before and after treatment demonstrated significant differences (in the expected direction) for both appropriate and deviant arousal, both of which remained stable at follow-up (up to 16

months later). Because of the concurrent use of treatment procedures, it is difficult to assess the contribution of thematic shift, but it appears likely that this procedure was responsible for the increases in appropriate arousal.

Critical of Marquis' failure to employ physiological measures of outcome, Conrad and Wincze (1976), conducted the first controlled study of thematic shift (with three homosexual males and one pedophile). Treatment involved 40 sessions of orgasmic reconditioning, using both visual and fantasised stimuli. The pedophile received additional electrical aversion therapy, which was found to be ineffective. Although the participants reported a subjective shift in sexual arousal, penile and behavioural measures indicated that sexual preferences remained unchanged. Therefore, it was concluded that orgasmic reconditioning was ineffective.

Brownell, Hayes and Barlow (1977) successfully treated five patients with various paraphilias. Primarily, the reduction of deviant arousal was targeted, and achieved through covert sensitization for all participants. However, for two of the patients (a heterosexual pedophile and a transvestite), masturbatory reconditioning was employed to increase non-deviant arousal. A six month follow-up demonstrated maintenance of treatment gains: all subjects demonstrated heterosexual arousal levels of at least 70% of full erection, and all reported having experienced satisfying sexual encounters with adult female partners. This study thus provided evidence that masturbatory reconditioning was successful in redirecting the arousal of the two patients treated, and that the arousal translated into actual behaviour.

Davison (1968), Lande (1980), and Thorpe, Schmidt, and Castell (1964), each also utilised a Marquis-style approach in their studies. However, procedural variations, or the addition of concurrent interventions creates problems for the interpretation of their outcome data. In summary, it appears that this technique has been moderately successful in enhancing appropriate sexual arousal. However, in cases where

deviant arousal is in evidence, orgasmic reconditioning is probably most effective when used in conjunction with other strategies that specifically target deviant arousal.

Rather than altering the content of sexual fantasy within the course of a single masturbatory episode, arguably a more manageable treatment procedure is the alternation of fantasy on separate occasions. Thus, Abel, Blanchard, Barlow, and Flanagan (1975) treated a sadistic rapist by alternating weekly blocks of trials in which deviant themes only were used, with trials using only non-deviant themes. The supposed advantage of this was that the responsibility for timing the essential shift in fantasy (and thereby the maintenance of correct temporal relations between deviant and non-deviant fantasies) was not left to the client. Each treatment session consisted of a single masturbatory episode in which the client masturbated to ejaculation while describing aloud either the deviant or non-deviant fantasy. Periodic measurement of sexual arousal and self-report data indicated that this alternating cycle paradoxically produced a substantial decrease in deviant arousal and a correspondingly large increase in non-deviant arousal.

VanDeventer and Laws (1978) also employed the alternating procedure with two subjects, both of whom were homosexual pedophiles, for a duration of six and eight weeks. Treatment included daily sessions of masturbation to orgasm, while verbalising the pertinent fantasy theme. The deviant (male child) and non-deviant (adult female) fantasies were alternated on a weekly basis. Assessment of penile arousal, as well as attitudinal measures, were taken during the course of treatment and at termination. These revealed mixed results: one subject's adult and deviant arousal responses declined during treatment, with deviant arousal increasing post-treatment, while the second subject's deviant arousal declined and responses to adult increased. This was maintained at two-month follow-up. In explaining the mechanism whereby the procedure has its effect, VanDeventer and Laws argued that the enhancement of adult arousal was produced by classical conditioning. Less

convincingly, they went on to suggest that the reduction in deviant arousal was brought about by cognitive mediational processes. The subject, when he realises that he could in fact become aroused to non-deviant themes, experiences "a period of confusion" in which he re-examines his self-attributions about being sexually deviant, and "therefore" begins to lose his deviant arousal.

Foote and Laws (1981) shortened the course of treatment for a bisexual pedophile by alternating deviant and non-deviant fantasies on a daily, rather than weekly basis. A multiple base-line design was utilised, with treatment initially targeting female children as the deviant theme. It was found that responsiveness to female children reduced, and increased toward female adults, as measured by a penile transducer. This pattern of responding was confirmed by subjective measures, including a masturbatory diary. However, at an 18-month follow-up, arousal to women had declined sharply, although deviant arousal remained low for both male and female children. Foote and Laws suggested that a better outcome in terms of adult arousal might have been possible had the client had opportunity to develop interpersonal skills with adult partners. A further study of this type was reported by Laws and O'Neil (1981), with both pedophiles and rapists, again with weekly sets of five sessions. At post-test, the six offenders demonstrated a reduction in deviant arousal and increased appropriate arousal.

Based on this research, Rosen and Beck (1988) explicitly recommended this procedure as the treatment of choice for increasing non-deviant arousal in the treatment of paraphilias. However, in a review of the literature, Laws and Marshall (1991) reached a very different conclusion. They argued that the theoretical basis of the procedure was flawed, and suggested that the outcome data did not support its continued use. However, Laws and Marshall included in their review an unsuccessful study employing the technique with ego-dystonic homosexuals (Leonard & Hayes, 1983), and these findings, which cannot necessarily be applied to

the treatment of sexual preference, may perhaps have unduly influenced their conclusion.

Perhaps the most straightforward technique for the enhancement of adult arousal is that of directed masturbation, a term coined by Maletzky (1985). In this technique, the subject is requested simply to masturbate to orgasm using exclusively non-deviant fantasies, and to completely avoid masturbating to deviant fantasies. Directed masturbation was first employed by Thorpe, Schmidt, Brown and Castell (1964) in the context of aversion-relief therapy (where the presentation of adult stimuli coincides with the termination of the aversive stimulus, thus pairing "relief" with appropriate stimuli) with male homosexuals and a cross-dresser (oddly enough, they also report using aversion relief with a phobic, an OCD patient, and a bulimic). Outcome was mainly self-report. Kremsdorf, Holmen, and Laws (1981) however conducted a controlled case study with a pedophile. Treatment consisted of daily sessions in the laboratory. The subject was required to masturbate to ejaculation, and to verbalise the content of his fantasies. Treatment continued until he could masturbate exclusively to appropriate erotic scenes outside of the treatment setting. At the end of treatment, female adults became the primary source of sexual arousal in fantasy, while female children were no longer considered significantly arousing. Follow-up at one and two months demonstrated that the mean arousal to adult females was over 75%, and arousal to children under 5%. According to these authors, their findings suggested that masturbating to deviant themes is not a necessary component of treatment.

According to Laws and Marshall (1991), the data on directed masturbation is limited but has demonstrated some success in enhancing appropriate arousal. They suggest that, given its simplicity and theoretical coherence, it is a promising technique worthy of future investigation. It remains unclear, however, whether or not this technique is appropriate for offenders who already exhibit a high degree of

arousal to adult stimuli, or whether, if used alone, it has any effect on deviant arousal.

Most of the other treatments designed to enhance adult sexual interest are based on the assumption that the critical issue is not low arousal *per se* but either anxious avoidance of intimacy with potential partners or a lack of the interpersonal skills necessary to achieving such relationships. Thus VanDeventer and Laws (1978) included sex education in their treatment package, Marshall and McKnight (1975) added social skills training, and Kohlenberg (1974) employed a Masters and Johnson-style *in vivo* desensitization approach.

6. Conclusions.

At this stage the literature reveals a rather unsystematic approach to the implementation of reconditioning by clinicians, with wide variations in procedures apparent. There are not yet standardised forms for implementing any of the treatments described above.

An introductory comment to Laws and Marshall's (1991) review is also pertinent:

"The masturbatory reconditioning literature is remarkable more for the enthusiasm it has produced in clinicians than for the empirical support it can offer for the efficacy of the techniques. The procedures are theoretically appealing, and they make good sense. This, unfortunately, seems to have resulted in their being uncritically adopted even when the evidence is meagre or even when it appears to deny their value" (pp. 14-15).

Laws and Marshall concluded their paper by recommending the use of the combination of directed masturbation and verbal satiation as the most promising method of reconditioning sexual arousal. The former reasonably could be expected

to enhance the client's sexual responsiveness to adult sexual partners, while the latter ought diminish arousal to deviant stimuli. An offender who satisfactorily engaged in treatment involving these procedures ought be less attracted to children, and more able, and motivated, to engage in appropriate sexual relations with an adult partner. It is well-recognised that interventions of this type are not sufficient in themselves to effectively treat sexual offenders (Marshall & Pithers, 1994), but, in conjunction with other treatment components, sexual arousal reconditioning is potentially extremely valuable (Marshall, Hudson, & Ward, 1992). Laws and Marshall urged, however, that this combined procedure be subjected to a systematic and carefully controlled experimental evaluation.

7. Theoretical issues.

The paradigm within which reconditioning procedures (directed masturbation and verbal satiation) are probably best located is that of classical, or Pavlovian, conditioning. As described in an earlier section, assumptions here include the idea that masturbation (and other forms of direct stimulation of the genitalia, such as might occur during actual offence behaviour) are UCS, while sexual arousal and orgasm constitute the UCR. Fantasies and imagery that accompany sexual arousal are CS, and arousal that comes to be elicited by these CS are CRs. The CRs of interest here are a weak or absent arousal response linked to the CS of adult sexual partners/interaction, and the presence of strong arousal responses elicited by the CS of child sexual stimuli. Sexual arousal responses to potentially sexually evocative stimuli are thus considered primarily (though not exclusively) as conditioned and reflexive in nature (Alford et al., 1987).

A caveat seems necessary here however regarding this formulation of the UCS. Masturbation and other direct forms of genital stimulation normally are, without doubt, potent UCS; they cease to be so however during times of sexual satiation, when the

adult male is supposedly "refractory" to sexual stimulation (Masters & Johnson, 1970). At such times, a kind of temporary and specific habituation might apply, in the sense that the strength of a response diminishes with the repeated presentation of an eliciting stimulus (Cooper, Heron, & Heward, 1987).

The treatment procedure of directed masturbation is designed to have the subject repeatedly associate, in fantasy, adult sexual imagery (CS) with masturbation (UCS) and sexual arousal and orgasm (UCR). This ought give rise to a new (or renewed) CR - sexual arousal in response to a CS (adult imagery). The second component requires that, while in state of very low sexual arousal the subject is to repeatedly pair his habitual CS (child sexual fantasy) but in the absence of an effective UCS (arousal or orgasm). According to classical conditioning theory, the repeated presentation of a CS in the absence of a UCS leads to the extinction of the CR.

The term satiation was originally applied to a technique that required the subject to masturbate to orgasm and beyond while utilising deviant fantasy throughout (Marshall & Lippens, 1977). The term "satiation" seems uniquely suited to a procedure conducted in this manner. However, altering the procedure by substituting directed masturbation into the initial phase of the procedure renders that term less accurate. It is thus probably more correct to speak of the second half of the procedure as "respondent extinction"¹.

The above discussion however may not account fully for the complexity of factors involved in the relationship between sexual preference and learning processes. For example, though the direct stimulation of the genitals is undoubtedly a UCS which may reflexively elicit the UCR of sexual arousal and orgasm, sexual arousal itself may be considered a potent sensory event, and thus a stimulus. As such, it might be

¹ For the sake of continuity with the existing literature, however, the term "satiation" will continue to be used throughout this report to refer to this treatment procedure.

argued that operant processes also provide an understanding of both the emergence of deviant interests and their therapeutic reduction. Under such a paradigm, the target behaviour (fantasising about deviant sexual activity) is viewed as an operant behaviour which has been learned via repeated reinforcement with sexual arousal and orgasm. Within this paradigm, the treatment procedure would also be seen to operate also by extinction, but in the sense that reinforcement (sexual arousal and orgasm) for the behaviour is not forthcoming, thus leading to operant extinction of the response. Similarly, the desired response of fantasising about appropriate sexual themes is reinforced with sexual arousal and orgasm, and thus increases in frequency and strength. This is of course the way that Marshall (Marshall & Lippens, 1977) originally conceptualised the procedure.

Perhaps one way of determining which of these paradigms better accounts for the behaviour is by establishing the presence of a post-extinction response burst. This is accepted as a feature of operant behaviours that are subjected to the withdrawal of reinforcement. It does not occur in respondent conditioning, the extinction response curve of which tends to show a gradual and more uniform reduction over time.

PART TWO

THE PRESENT STUDY

CHAPTER FIVE

RATIONALE

Rationale for Study

This review of the literature has established deviant sexual preference as a central feature in the clinical perspective of the sexual offender. Though less well researched, the importance of the offender's responsiveness towards appropriate adult sexual interaction has also been argued. Treatment strategies designed to decrease the former, and increase the latter, range from aversive conditioning and covert sensitization to thematic shift and masturbatory and verbal satiation. However, none of these procedures have been adequately evaluated - most of the studies have involved less than half a dozen participants, multiple intervention have been used within a single design, and few have employed control groups.

The present study was designed to fill an important gap in the literature on sexual preference reconditioning. A substantial number of participants, each demonstrating deviant sexual preference, were exposed to an adapted version of the most promising treatment procedures, and their arousal responses then reassessed. This was done within a multiple base-line, across groups, experimental design.

Hypotheses

The present study sought to evaluate the reconditioning of sexual arousal with child molesters by testing the following hypotheses:

1. The treatment intervention of directed masturbation significantly increases

sexual arousal towards adult stimuli.

2. The treatment intervention of verbal satiation significantly decreases sexual arousal towards child stimuli.

The study sought to evaluate the validity of phallometry with child molesters by testing the following hypothesis:

3. There is agreement between the arousal responses of offenders and their sexual orientation and victim characteristics.

The study also sought to evaluate the reliability of phallometry with child molesters by testing the following hypothesis:

4. When repeatedly assessed, sexual arousal responses do not differ significantly across assessment points.

Within this study, sexual arousal has been operationally defined as an increase in the circumference of the penis.

CHAPTER SIX

METHOD

Participants

All participants were incarcerated offenders convicted of one or more sexual offences against persons under the age of 16. Prior to their inclusion in this study, each had volunteered for entry to the Kia Marama Special Treatment Unit, a separate wing of Rolleston Prison. This unit provides a comprehensive psychological treatment programme for child sex offenders. Treatment intakes were, during the time the study was conducted, operating every four to five months. Inmates accepted for treatment were transferred to Rolleston Prison (from regional prisons) several months in advance of the commencement of their treatment programme.

Selection for the study occurred as follows. Following each offender's arrival at the unit, he underwent routine phallometric assessment. Resulting data sets were classified into a range of profiles, based on those of Marshall and Barbaree (1989). For the purposes of classification, a cut-off score of 30% of full erection was used. Four sub-types (independent of gender considerations) were used: "adult" (A), "adult/child" (AC), "child" (C), or "unclassifiable" (U). To illustrate, classifying a profile as AC would occur when the data set revealed full erection scores of 30% or greater in response to adult stimuli *and* to material depicting underage sexual partners. The U profile indicated scores below 30% in all categories. Offenders whose profiles were thus classified as either AC or C were then invited to participate in the study. Those demonstrating either A or U profiles were not invited. A total of 30 participants volunteered for inclusion in the study.

These participants formed three experimental groups, each comprising ten members. Each group was drawn from intakes separated by periods of several months: the first group was selected from a pool of offenders who arrived at the unit between July and November 1990, the second group from a pool arriving between August and December 1991, and the third, between May and August 1991. They are referred to hereafter as groups one, two and three. The number corresponds to the frequency of the pre-treatment assessments undergone by that group.

Prior to the formation of group one, 18 men were assessed, of whom 14 showed levels of deviant arousal above criterion. For groups two and three respectively, 11 and 12 potential candidates were identified from original populations of 19 and 17. All candidates were then interviewed, details of the reconditioning treatment procedure were explained, and they were invited to participate. At this point the volunteers each signed a consent form (Appendix 1).

It was hoped that a minimum of ten participants could be recruited for each experimental group. As it transpired, the number of individuals consenting to participate on each of the three recruitment episodes was exactly ten. A total of seven (potentially suitable) persons declined; they were not required to give reasons, though a number spontaneously cited unwillingness to undergo repeated phallometric assessments. The remainder had exhibited either an adult profile (5), or an unclassifiable profile (12).

Participants were then interviewed using a structured interview schedule (Appendix 2), in order to gain information about their offence, personal, and social histories. Their prison files were also consulted to confirm some of the details supplied, such as number of previous convictions. In the course of this interview each participant was questioned about episodes of sexual dysfunction (in order to screen out

individuals with a history of erectile difficulties) and current medications. Assessment of intellectual function was then carried out using the Shipley Institute of Living Scale.

Assessment Procedure

Participants were assessed using a penile plethysmograph (Parks, model 240). All assessments took place in the purpose-built laboratory located within the treatment unit at Rolleston Prison. On each assessment occasion, participants were given 24 hours advance warning. They were requested to refrain from masturbation for that period of time. All assessments were carried out between the hours of 9 am and 4 pm.

After the participant had been brought into the laboratory, the assessment procedures were carefully explained (the standardised procedure is detailed in Appendix 3). He was then shown into a separate curtained area of the room, where a reclining chair faced a blank screen at a distance of approximately two and a half metres. The full-length curtain dividing the two areas of the room readily permitted conversation between participant and experimenter, but prevented visual contact. The participant, as instructed, took down his trousers and underwear, seated himself, then attached the circumferential mercury-in-rubber strain gauge to his penis. This device consists of a loop of fine-bore silicone tubing filled with mercury and plugged at both ends with electrodes which run to the recording equipment. The device records increases in the circumference of the penis concomitant with erection; as erection occurs, the rubber tubing of the gauge stretches, its internal diameter decreases, and the corresponding thinning of the enclosed mercury column creates a resistance change. This change is amplified by the recording device and transmitted to the computer as an analogue signal.

Once the participant reported that the gauge was correctly fitted, a base-line

recording was made. This was achieved by pressing momentarily on the "ready reset" switch. This action adjusts the plethysmograph's internal circuitry to accommodate the shortest length of gauge to be used (assumed to correspond with complete penile flaccidity).

After achieving the base-line measure, each participant was requested to obtain a full erection. In order to facilitate this, a slide depicting sexual activity between two adults (either homosexual or heterosexual - participants had earlier been asked what they considered their adult sexual orientation to be) was presented. The participant was also instructed to manipulate his penis in order to produce an erection, at which point he was to report this fact to the experimenter. The output level control of the plethysmograph was then adjusted towards the upper level of the full measurement range. Allowance was made for the possibility that outputs higher than this initial level might occur during stimulus presentations. This procedure permitted the later conversion of data generated during the assessment into "percentage of full erection" scores.

The analogue signal from the plethysmograph was transmitted to an XT computer via an analogue-to-digital converter card. Software developed elsewhere (Eccles, 1989) functioned to convert the continuous output from the plethysmograph into discrete scores for each of the stimulus presentations. These scores, for each stimulus presentation, included total millimetre deflection scores (both peak and mean), base-line increments (peak and mean), latency to peak times (in seconds), as well as averaged peak and mean increment scores for each stimulus category. An example of the computer generated print-out for an assessment session is included in the appendices (Appendix 4).

Certain participants encountered difficulty in achieving full erection at this initial stage. If full erection had not been achieved after two minutes, the participant was

provided with sexually explicit magazines to peruse. If this did not produce the desired effect within five minutes, the assessment proceeded, with participants under instruction to report any instance of full erection that occurred in the course of stimulus presentations. Had full erection not occurred by the time all 18 stimuli had been presented, participants were asked to attempt to achieve full erection, using manual stimulation, one further time. The data from any participant not able to achieve full erection by this stage would have been excluded from the study; however, no participant had difficulty with this requirement - all were, at some point in the course of each assessment, able to achieve full erection.

Participants were presented with a series of stimulus arrays involving both auditory and visual modalities. At the end of each stimulus presentation, time was allowed to permit detumescence, should tumescence have occurred. The minimum time before the next stimulus was presented (for instance, in the event of minimal or no arousal to the preceding stimulus) was 20 seconds. If some erection had occurred, the next stimulus was delayed until a return to base-line had occurred. If this had not occurred after 60 seconds, the participant was engaged in distracting conversation - occasionally, delays of up to five minutes were necessary.

The sequence of presentation of the 18 stimulus arrays was in fixed pseudo-random order. Each slide was displayed for approximately 120 seconds (+/- 5 seconds). The full assessment took around 75 minutes to complete. During the presentation of each stimulus, the experimenter scrutinised the computer-generated graph depicting the erection response. This was done in order to detect any anomalous data. For example, a curve which steadily increases but in a "bumpy" manner can be indicative of the participant manipulating his penis (Laws & Holmen, 1978). Fortunately, no responses of this type were observed. Further, abrupt movement by the participant in the reclining chair could produce an artifactual spike in the graph; if not detected,

this spike distorted the scores.

At the conclusion of the assessment, participants were debriefed by enquiring as to their reactions and impressions of the material presented. They were then accompanied out of the building, and allowed to return to the accommodation wing.

Stimulus Material

The stimulus array involved both auditory and visual modalities. The array consisted in part of a colour photographic slide depicting a nude figure. There were three slides presented from each of the following six categories: male child, male adolescent, male adult, female child, female adolescent, female adult; a total of 18 slides in all. The adolescent slides depicted young teenage children with secondary sexual characteristics. The child slides depicted children with an absence of secondary sexual characteristics.

Presented simultaneously with each slide was an audiotaped depiction of explicit sexual activity. These scenarios involved an individual, corresponding to that depicted in the slide, and spoken by a male voice in the second-person (the verbatim scripts of these scenarios are available to other researchers upon request from the author). For each of the six categories of "target" (e.g., male child, female adult), there were three individual stimulus presentations involving distinct slides and stories; two stories described consenting sexual activity of different levels of intrusiveness, the third a forcible, non-consenting scenario involving threats and physical violence. For example, in the category of female adolescent, each of the three separate slides was presented concurrently with one of three different audio scenarios. The first depicted a series of events leading up to mutual masturbation, the second to penile/vaginal intercourse. In these two, the victim is described as

passive and/or cooperative. In the third, the sexual activity is again penile/vaginal intercourse, and the victim is depicted as fearful and unwilling, while the offender is depicted as aggressive and intimidating. The pairing of individual slides to specific audio scenarios was consistent across all assessments.

Treatment Procedure

The participants included in the study underwent a combined treatment procedure designed to reduce their deviant arousal and increase non-deviant arousal. They were instructed in the techniques of directed masturbation and verbal satiation. The duration of the treatment phase was four weeks.

Prior to commencing the treatment phase, participants were requested to write out a list of specific sexual fantasies or images involving children, each fantasy being rated by the participant as sexually arousing to him. The experimenter subsequently discussed each participant's list with him, to ensure that it was in fact inclusive of all of his potentially arousing fantasies. The number of specific fantasies listed by participants varied between six and fifteen. The fantasies were then reduced to a single phrase or sentence that described the activity or image. Participants were instructed to use these phrases during the reconditioning procedure. A detailed instruction sheet on the procedure, issued to each participant, is included in the appendices (Appendix 5).

The procedure required each participant, in the privacy of his individual cell, firstly to masturbate to orgasm/ejaculation while simultaneously focusing on vivid fantasies of consenting sexual activity with an adult partner. Then, 1 - 2 minutes after orgasm, he began speaking out loud, into a dictaphone tape recorder (supplied for this purpose), one of the phrases describing a sexual fantasy involving children. He was asked to

try to make the mental image of the activity as vivid as possible. He was to continue doing this for a minimum of 20 minutes. The dictaphones, for recording of verbalised fantasy, were utilised in order to assess compliance with the treatment procedure.

Each fantasy was to be dealt with sequentially, such that, for the first 5 - 10 minutes, the participant was to focus on a single phrase before moving on to another. He was asked to keep repeating the single phrase out loud, repetitively, for as long as it took to become "very bored or irritated" by it, then to carry on doing it for another minute more. Then he was permitted to move on to another fantasy. He was required not to finish verbalising any individual fantasy until the point of boredom/irritation had been reached.

After completing at least 20 minutes of recorded verbalisation, the session was considered complete. The participant was then requested to write on a form (Appendix 6) the details of each session: the date, the time the session commenced, the number of minutes spent on each part of the procedure, and any comments about difficulties he might have experienced in performing the procedure.

The participant was asked to practice the procedure only at times when he was alone and could be sure he would not be disturbed, such as after cells were locked in the evening. He was also asked to ensure, during the completing of the procedure, that he was free from sources of distraction such as television or radio broadcasts. Participants were requested to practice the procedure at least twice each week, but encouraged to do so more frequently if possible. A minimum of eight completed tapes over the course of four weeks was sought from each participant.

Participants were asked to bring the tapes and record forms to the experimenter as soon as practicable after completing the procedure (usually the next day). At this

meeting the experimenter reviewed the tape, with the participant present, to ensure correct adherence to treatment instructions. The entire tape was not listened to, but up to 10 brief segments were played, between which the tape was fast-forwarded. Fast-forwarding was done with the machine still in "play" mode, to check for continuity of verbalisation. Particular attention was given to ascertaining that the tape showed appropriate repetition of fantasies, and that the entire record was a minimum of 20 minutes. Feedback was given if refinement of techniques was called for. Some participants, in their first tape, were found to be shifting from one fantasy to another too rapidly, thus risking failure to achieve "satiation" with that particular image. Others failed to repetitiously verbalise a single "snapshot" fantasy, instead engaging in a more extended sequential description of a sexual interaction. Corrective feedback was given on these points. All participants were able to provide tapes that conformed to expectations after initial feedback sessions.

At the conclusion of the feedback session, the experimenter erased the cassette tape with a magnetic eraser. This was done to protect confidentiality, and to ensure that a completed tape was not re-presented as the recording of a subsequent treatment session.

For each of the three experimental groups, the study was conducted during months preceding the commencement of the participants' treatment programme proper. This period of time is essentially "waiting-time" for offenders at the Unit. Thus they were not exposed to any other form of treatment or intervention during the course of the study.

The treatment procedure utilised in this study contains a number of procedural features that are at variance to protocols which some researchers and clinicians have implemented. The main variations, and the rationale for each, are:

1. Participants were not required to verbalise (or tape-record) their fantasies of adult sexual interaction during the directed masturbation phase.

Verbalisation of fantasy while masturbating has been shown to inhibit arousal (Henson & Rubin, 1971), and is considered by clients to be demanding and unpleasant. Such a requirement might well serve to prevent the development of positive associative conditioning between the specific adult fantasies and sexual arousal, thus inadvertently defeating the very purpose of the procedure.

2. Participants were not required to masturbate their flaccid penises during the satiation period. Thus the procedure entails simple verbal, rather than masturbatory, satiation.

The requirement to constantly manipulate the penis during satiation was considered unnecessary to achieving the treatment effect. Its inclusion in the procedure could arguably be said to transform the procedure from one of extinction (i.e., the continuous, unrewarded repetition of a behaviour resulting in the behaviour diminishing and ceasing) to that of punishment. Moreover, as the treatment procedure is one that the client must be relied upon to perform privately, only the most highly motivated clients (a feature which is relatively uncommon amongst sexual offenders) might be expected to practice it under such conditions.

3. The time period for the satiation period was set at 20 minutes. This is in contrast to protocols for the procedure proposed by Abel et al., (1984), who suggest 60 minutes.

There is some evidence (Laws et al., 1987) that 20 minutes is adequate. Again, the required length of the satiation period, and the level of client compliance, are likely to be inversely correlated.

4. The total number of treatment sessions required was eight, over a period of four weeks. Again, this is much less than the 20-plus sessions recommended by Abel and his co-workers.

Client compliance was again a consideration here. There was also a practical consideration: all participants involved in the study were booked in to a treatment programme that had a specific start date. Their involvement in this study occurred prior to the commencement of treatment proper, in order to control for the impact of other interventions. Logistically, it was impractical to arrange for transfer of the required number of participants to the unit with sufficient time available to permit a longer treatment phase. It was expected that, if the treatment intervention had an effect, this should be apparent following the treatment time period allowed here.

Dependent Measures

1. Participant demographic and offence-related data.

After reading the prison file of each participant the experimenter conducted an interview, during which a questionnaire (Appendix 2) recording various offence-related and demographic details was completed. Though not germane to the primary experimental hypotheses, this information addressed the comparability of experimental groups, as well as allowed comparisons between participants who demonstrated satisfactory versus unsatisfactory treatment outcomes. This data also allows for comparisons between the present sample and other populations of offenders with whom clinicians and researchers may be dealing.

2. Treatment compliance.

"Participant record forms" (Appendix 6) provided data on the number of reconditioning sessions completed by each participant. The number of minutes spent in directed masturbation and verbal satiation was also recorded.

3. Sexual arousal responses.

Each phallometric assessment generated 19 individual scores. This included a full erection response, and three scores in each of the six gender x age categories (i.e., male/female x child/teen/adult). Each score was first converted to a percentage of full erection figure. This was achieved by dividing the score for the response which the participant reported as representing full erection (usually, but not always, the score obtained during the presentation of the first slide) by the figure for each individual stimulus presentation. These figures were then analyzed to produce four basic data points within each of the six categories: single highest peak score, mean of the three peak scores, highest mean score, and mean of mean scores. These four scores were subjected to correlational analysis (reported in the results section); on the basis of these correlations, and in keeping with what has become common practice amongst other researchers, mean of peaks scores have been the data form utilised in this study.

For the mean of peaks scores, the number of raw scores averaged varied between deviant and non-deviant categories. For adult male and female, two individual response scores were averaged, but for each of the deviant categories, three scores. This was the result of the omission, from adult means, of the data for the stimulus presentation which included an audiotaped depiction of coercive sexual interaction. Obviously, the response to this stimulus could not properly be included in a score which was utilised as an index of "appropriate" adult arousal. The data from this stimulus was therefore not used in this study.

A reduction of data complexity was achieved by collapsing the categories across gender. Thus, categories were first reduced to three: adult, teen and child. This was done on the premise that the gender orientation of arousal was unimportant from a treatment point of view. Again, this form of reporting the data is becoming standard in the literature. Finally, because the highest deviant scores for many subjects (i.e., those repeatedly assessed prior to treatment) tended to shift across age categories at each successive assessment point, a further reduction, to "adult" versus "deviant" arousal, was utilised for presentation of the assessment data in relation to treatment outcome.

A second form of reporting sexual arousal response data was via ratio scores. These were also derived from mean-of-peaks scores. For each participant, the highest score from the four deviant categories (teen or child/male or female) was divided by the higher of the score for either adult male or female. The data of participants whose adult arousal figure was less than 10% were excluded. Ratio scores provide some control for the effect of stimulus habituation with repeat measures. Assuming any habituation to adult and deviant stimuli occurred at the same speed, a decrease in ratio scores would reflect a positive change in the relative strength of adult to deviant arousal. This might occur because of an increase in the value of the denominator (adult arousal) associated with a decrease (or constancy) in the value of the numerator (deviant arousal), or by an unchanged denominator occurring alongside a decreased numerator.

Thirdly, profile classification were also used. The first analysis sorted individual assessment profiles into the four sub-types "adult" (A), "adult/child" (AC), "child" (C), or "unclassifiable" (U) (the latter indicated mean of peak scores below 30% in all categories). In a second analysis, data sets were sorted by deviant *age* category. A third analysis sorted data sets by *gender* categories. Profiles were tracked across assessment points to assess the degree of stability or change.

Relationship Between Data And Hypotheses

The experimental hypotheses are listed below, with data relevant to each noted.

1. "The treatment intervention of directed masturbation significantly increases sexual arousal towards adult stimuli".

It was expected that, following the treatment intervention:

- (i) adult arousal mean of peaks scores would increase;
- (ii) ratio scores would decrease;
- (iii) arousal profiles featuring low or absent arousal to adults would change to profiles in which such arousal was present.

2. "The treatment intervention of verbal satiation significantly decreases sexual arousal towards child stimuli".

It was expected that, following the treatment intervention:

- (i) deviant arousal mean of peak scores would decrease;
- (ii) ratio scores would decrease;
- (iii) arousal profiles featuring deviant arousal would change to profiles in which such arousal was absent.

3. "There is agreement between the arousal responses of offenders and their sexual orientation and victim characteristics".
 - (i) age and gender represented in the stimuli to which the higher mean peaks of arousal were recorded would match the participants' sexual orientation and the age and gender of their actual victim(s).

Data from all three experimental groups were relevant to the testing of the first three hypotheses.

4. "When repeatedly assessed, arousal responses do not differ significantly across assessment points".

It was expected that, prior to the treatment intervention:

- (i) levels of adult arousal would remain constant;
- (ii) deviant arousal levels would remain similarly constant;
- (ii) ratio scores would remain constant;
- (iv) arousal profiles would remain constant in regard to age (adult, teen and/or child) and gender of target.

Because group one had just one pre-treatment assessment, only data from groups two and three were relevant to the testing of this hypothesis.

Statistical Analysis

Used in the statistical analyses of the data of this study was the computer software package Statview (Abacus Concepts, 1987). Each comparison was by way of analysis of variance (ANOVA), using Fisher's PLSD for *post hoc* comparison. Conditional probability computations were used with profiles, and Chi-squares with inter-group comparisons.

Tables were constructed using WordPerfect 5.1 (WordPerfect Corporation, 1990), and graphs with CorelDRAW (Corel Corporation, 1994).

Experimental Design

In regard to the treatment hypotheses, this study employed an across-participants, multiple base-line, design. Participants in each of the three groups underwent assessment of sexual arousal response by plethysmograph, were exposed to the treatment procedure, and after completing the requisite number of treatment sessions over a period of four weeks, were reassessed. The fundamental difference between experimental groups was the number of pre-treatment assessments. Group one was assessed on one occasion only before treatment, group two was assessed on two occasions before undertaking treatment (assessments being spaced four weeks apart) and group three was assessed on three occasions prior to treatment (again, each assessment being spaced four weeks apart). This design was utilised to control for habituation, or other effects of the passage time alone, on arousal levels. If decreases in deviant arousal, and increases in appropriate arousal, were shown to be temporally contingent on the treatment procedure rather than merely the passage of time, such changes might justifiably be considered evidence for the efficacy of the treatment procedure.

Validity was approached by assessing the degree of match between the participant's

highest mean peak of arousal to adult stimuli (*vis a vis* gender) with that of his stated sexual orientation, and his highest mean peak of arousal to deviant stimuli (*vis a vis* age and gender) with his actual victim's age and gender.

In regard to the reliability hypothesis, the design was one of simple repeated measurement. Participants in two of the three groups underwent assessment of sexual arousal response on multiple occasions prior to any treatment intervention, each assessment occurring four weeks apart. As described above, before undertaking treatment, group two was assessed on two occasions, and group three was assessed on three occasions. Each assessment was identical in form and content. This design enabled evaluation of the reliability of phallometric measurement: if arousal levels and target specificity remained constant over time, this would support the reliability of the phallometric assessment procedure.

CHAPTER SEVEN

RESULTS

Overview: Data Analysis and Presentation

Throughout this section, a standard format is observed in discussing the data generated by the study. Under each of the section headings, there is firstly a discussion of how the data were organised for the particular analysis undertaken, and the statistical test used is identified; these tests mainly are analyses of variance (ANOVA). Any findings of significant differences are then detailed in the standard form of the F ratio, degrees of freedom, and probability. The meaning of the finding is then briefly outlined. A table follows, presenting means and standard deviations (or frequencies). Where appropriate, the data are also presented graphically.

Participants

1. Group comparisons.

Interviews with participants revealed that none had previously undergone phallometric assessment, nor were any receiving psychotropic medication at the time of their involvement in the study. None had a history of erectile disorder. None of the participants who volunteered for the study dropped out prior to completion of all treatment and assessment tasks.

Demographic, personal, and offence-related data for each of the three treatment groups were summarised into means and frequency counts. These were compared by ANOVA to investigate the degree of similarity between the treatment groups. Of

all of the demographic factors, only the difference in mean age of groups one and two approached statistical significance, $F(3,27) = 2.63, p = .06$. In regard to mean number of victims, the figures for group 3 were inflated by one person who admitted to having molested "around 100" victims. Analysis of variance for this variable indicated that the between-group difference was not significant (see Tables 3-5 for means, SDs and frequencies).

2. Treatment compliance.

Participants recorded the date and times on which they completed treatment sessions, as well as the number of minutes spent in directed masturbation and verbal satiation. Group means for each of these variables were computed.

Compliance with the treatment procedure was adequate: twenty eight men completed the minimum number of reconditioning sessions (8), with the remaining two having completed seven when re-assessed. Apart from these two isolated exceptions, participants generally reported having been able to successfully complete the treatment procedure at least twice each week.

There was a significant difference between groups in regard to number of treatment sessions completed, $F(3,27) = 5.5, p = .013$. *Post hoc* tests (Fisher's PLSD) suggests that participants in group one completed significantly more treatment sessions than those in groups two and three. Other differences in regard to time spent were not significant (see Table 6 for means and SDs).

Table 3
Demographic data, treatment groups

	Group 1	Group 2	Group 3
Age			
Mean	46.3	34.5	40.7
SD	10.58	11.13	9.82
Ethnicity			
European:	9	10	10
Samoan:	1	0	0
Post-primary education (years)			
Mean	2.2	3.4	3.1
SD	.92	2.06	1.85
Marital status			
Single:	2	4	2
Married/De			
facto:	4	4	7
Sep./Divorced:	4	2	1
Occupational level			
Prof./Managerial	0	2	2
Other w. collar	0	1	0
Clerical	3	0	1
Trades	4	3	4
Unskilled	2	0	1
Unemployed	1	3	1
Other beneficiary	0	1	1
Intelligence			
Mean	101.6	97.9	105.8
SD	13.67	11.26	15.61

Table 4
Other personal data, treatment groups

	Group 1	Group 2	Group 3
Sexual orientation			
Heterosexual	6	6	7
Homosexual	4	3	2
Bisexual	0	1	1
Arousal profiles (1st assessment)			
Adult/child	9	7	5
Child	1	3	5
Exposure to pornography			
Nil/minor	6	2	8
Occasional	3	5	0
Extensive	1	3	2
Has other paraphilias ²	4	5	3
Was sexually abused in childhood	7	6	7

² Other paraphilias disclosed by participants included voyeurism (5), bestiality (3), exhibitionism (2), and rape and fetishism (1 of each).

Table 5
Offence-related data, treatment groups

	Group 1	Group 2	Group 3
Length of sentence (months)			
Mean	32.6	33.3	34.9
SD	20.17	16.09	9.23
Months in prison			
Mean	10.5	9.4	10.1
SD	17.87	9.51	4.6
Has previous convictions			
Sex	4	3	2
Other	7	2	2
Duration of offending career (years)			
Mean	10.7	10.6	17.8
SD	8.53	8.72	11.30
Offending commenced prior to age 20	5	7	7
Number of victims (self-report)			
Mean	5.7	8.2	15.5
SD	7.21	6.03	30.23
Gender of victim(s)			
Male	4	2	2
Female	6	3	6
Both	0	5	2
Age of victim(s)			
Mean	10.4	10.0	9.8
SD	2.75	2.94	4.15
Relationship to victim(s)			
Intra-familial	3	3	2
Extra-familial	7	7	8

Table 6
Treatment sessions completed, time spent

	Group 1		Group 2		Group 3	
	Mean	SD	Mean	SD	Mean	SD
Number of Treatment sessions	10.6	1.84	8.4	0.84	8.7	1.64
Number of Minutes in Directed Masturbation	7.65	5.42	6.98	4.43	5.71	2.85
Number of Minutes in Verbal Satiation	24.6	5.2	22.7	2.52	21.1	2.47

Treatment Effect

1. Data conversion and presentation.

As has been described in the previous chapter, individual arousal response scores were combined to produce four basic data points within each of the six (gender x age) categories. These four data forms were single highest peak score, mean of the peak scores (two peak scores for adult stimuli, three for deviant), highest mean score, and mean of mean scores. These scores (using the data from the entire sample) were subjected to correlational analysis (see Table 7). Results of this indicate acceptably high levels of correlation for all forms, with overall most satisfactory coefficients achieved by the mean peak scores. This score (which, as noted above, is the most widely used form of data reporting in the literature) was therefore adopted throughout this report.

Table 7				
Correlation coefficients for data forms				
	High peak	Mean peak	High mean	Mean mean
High peak	1.00			
Mean peak	.914	1.00		
High mean	.850	.894	1.00	
Mean mean	.770	.907	.948	1.00

2. Adult arousal: Percentage scores.

In evaluating this aspect of the treatment effect, only the group means for the assessments immediately prior to and following the treatment intervention are compared (statistical comparisons between the pre-treatment assessments are detailed below in the Reliability section). It was hypothesised that, because the treatment procedure repetitively paired appropriate sexual fantasies with sexual arousal and orgasm, participants' sexual arousal to adult stimuli would increase.

For each participant, individual peak percentage arousal scores to adult stimuli (male or female, whichever scores were higher) were averaged. Analysis of variance was conducted on each pair (pre- and post-treatment) of scores. There was a significant difference between pre- and post-treatment arousal for group one, $F(1,9) = 10.5, p = .01$. This was in the opposite direction to that expected. The pre- and post-treatment differences for the other treatment groups were not significant, although adult arousal also underwent a substantial decline for group three.

Means for adult arousal scores are depicted graphically in Figure 1, and Table 8 provides both means and SDs for this data.

Figure 1.
Averaged mean percent full erection scores for adult stimuli during base-line and treatment phases.

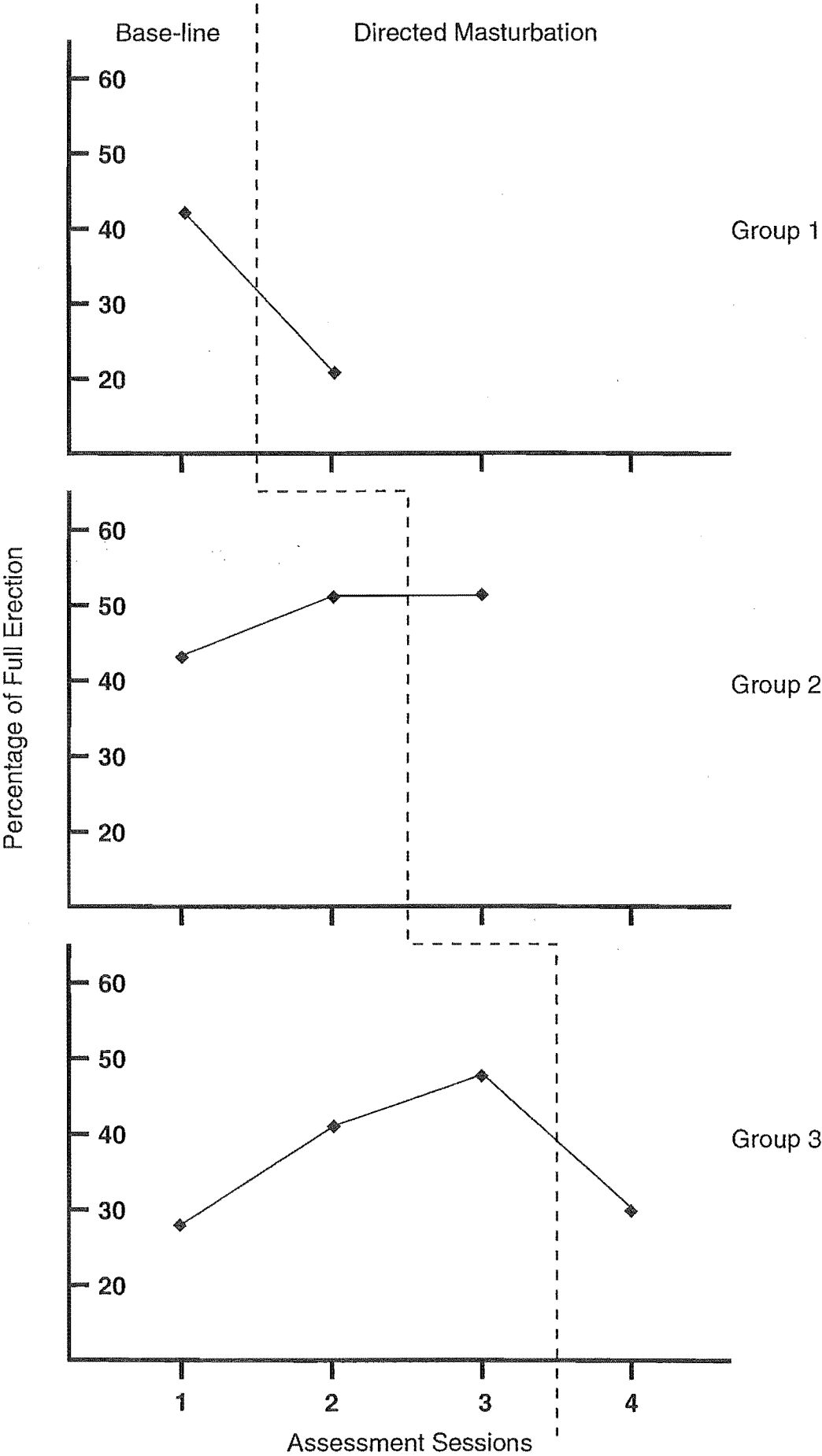


Table 8
Pre- and post-treatment adult mean of peaks scores

	Pre-treatment Assessment		Post-treatment Assessment	
	Mean	SD	Mean	SD
Group 1	42.7	23.8	21.5	19.4
Group 2	51.1	32.9	51.1	27.4
Group 3	48.1	22.7	30.0	21.0

2. Deviant arousal: Percentage scores.

It was hypothesised that recorded levels of deviant arousal would, following treatment, decrease. To permit evaluation of the *degree* of change, pre-treatment deviant arousal data (all groups, all pre-treatment assessments) were combined and analyzed to determine population means and standard deviations. This analysis revealed the population pre-treatment mean to be 60.3, SD 25.1. The number of participants who recorded a post-treatment score that was beyond one SD below the pre-treatment mean (i.e., a score of < 35.0) was 19. Of these, 3 recorded a post-treatment score beyond two SDs below the mean (i.e., < 10.0). The post-treatment mean for all groups was 33.2, SD 23.5.

As in the previous section above, each participant's pre- and post-treatment peak percentage arousal scores to deviant stimuli were averaged, and data subjected to analysis of variance. There was a significant difference between pre- and post-treatment arousal levels for all groups. The decrease for group one was the most dramatic, $F(1,9) = 60.6, p = .001$. That for group three was also marked, $F(1,9) = 21.6, p = .001$, and that for group two less striking, but nevertheless significant, $F(1,9) = 5.6, p = .042$. These changes were in the expected direction.

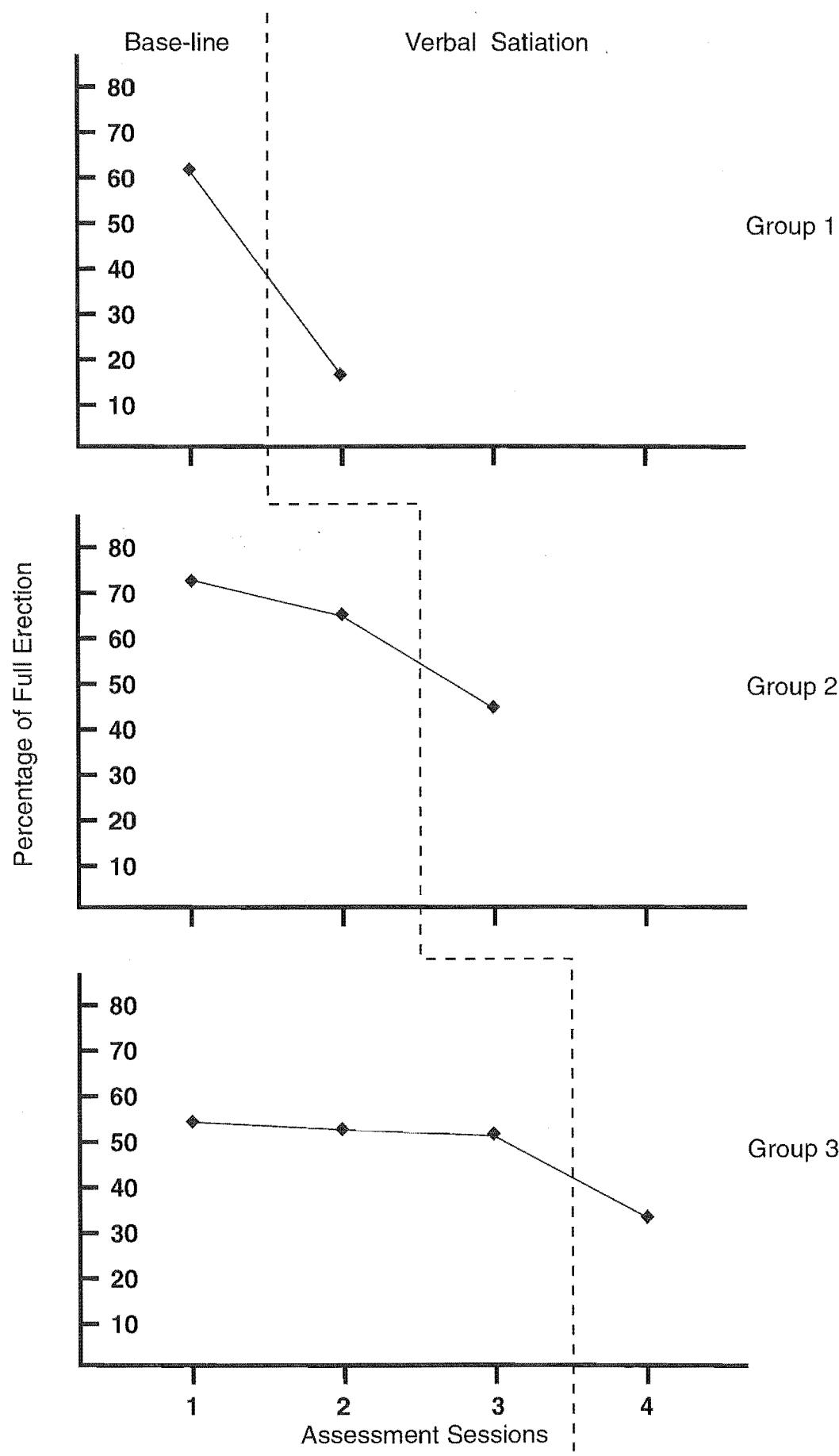
For groups two and three, deviant arousal is not significantly different at each of the

assessment points prior to treatment (this data is discussed further below in the Reliability section); hence the significant decrease following the treatment intervention suggests a treatment effect. As can be seen from Figure 2, the treatment effect mentioned above is very clearly demonstrated by group three, with quite remarkable stability in the pre-treatment assessment points, and a decrease after treatment. However, with group two, despite the statistically significant decrease between assessment points two and three (post-treatment) and the lack of any significant difference between points one and two, it is possible to view these data as a simple downward trend. However, treatment, at the very least, has accelerated this trend.

Table 9 provides means and SDs of the deviant arousal group mean scores, and means are also depicted graphically in Figure 2.

Table 9 Pre- and post-treatment deviant mean of peaks scores				
	Pre-treatment Assessment		Post-treatment Assessment	
	Mean	SD	Mean	SD
Group 1	61.5	20.2	18.8	10.5
Group 2	65.4	27.9	46.9	29.7
Group 3	52.4	28.9	33.8	18.6

Figure 2.
Averaged mean percent full erection scores for child stimuli during base-line and treatment phases.



3. Ratio scores.

As with percentage arousal data above, only the ratios for the assessments immediately prior to and following the treatment intervention are here compared, with statistical comparisons between the pre-treatment ratios detailed in the section headed Reliability below. It was hypothesised that ratio scores would decrease following treatment.

Each participant's ratio scores were computed by dividing his peak deviant arousal score by his peak adult arousal score. Scores were subjected to analysis of variance. There was a significant difference between pre- and post-treatment ratios for group one, $F(1,9) = 9.55, p = .021$. This was in the expected direction - it signifies a difference in the relative strength of deviant versus adult arousal for participants in this group after the treatment phase. For group two, ratios followed a downward trend from the pre-treatment and post-treatment assessments, but this change was not significant. Visual inspection of Figure 3 suggests that this downward trend has occurred over all three assessment points. It was of course hoped that ratios would remain stable prior to treatment, then decline thereafter. Ratios for group three did almost the opposite, declining from assessment one to two, then remaining very stable. The two ratio scores immediately prior to and following treatment were almost identical. The decrease between assessment points one and two for this group is discussed further below under the section headed Reliability.

Table 10 provides ratio means and SDs for arousal group scores, and means are also depicted graphically in Figure 3.

Figure 3.
Ratio scores for base-line and treatment phases.

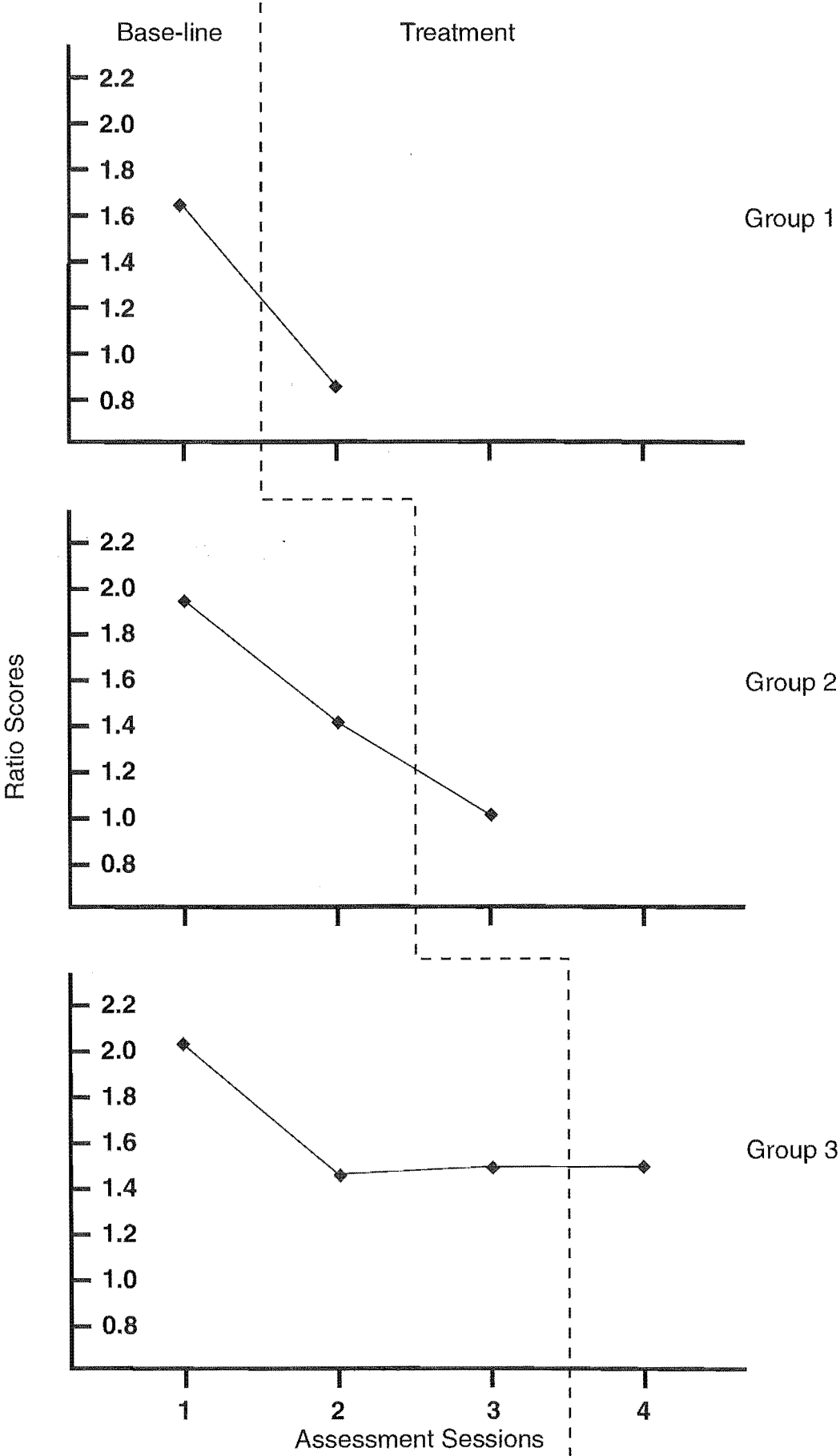


Table 10
Pre- and post-treatment ratio scores

	Pre-treatment Assessment		Post-treatment Assessment	
	Mean	SD	Mean	SD
Group 1	1.623	.728	.877	.333
Group 2	1.413	.732	1.021	.638
Group 3	1.567	1.418	1.569	1.432

4. Profiles.

Individual data sets from each assessment were classified as "adult" (A), "adult/child" (AC) or "child" (C); (rules for classification are described above in the Method chapter). A number of transitional permutations were possible (C → A; AC → A; C → C, etc.). It was hypothesised that the arousal profiles of participants would, following treatment, undergo a transition from AC or C to A.

The possible categories were listed, and the number of discrete transitions corresponding to each counted. The raw frequencies were then converted to probabilities (i.e., given x at $t1$, what is the probability of x occurring at $t2$?). The figures generated by this analysis suggest that the most probable pre- to post-treatment transition was from a deviant profile (i.e., C, AC) to a deviant profile. A substantial proportion of participants (13, or 43%) were exhibiting the same (or a similar) deviant profile at both points, or went from A to C. Only three (10%) deviant → non-deviant transitions were recorded, although two others were C → AC. The biggest group underwent a transition to "unclassifiable" (U). Table 11 summarises these data.

Table 11
Pre- to post-treatment profile transitions

	Frequency	Probability
Adult → Child	1	.03
Adult → Unclassifiable	3	.10
Child → Adult	1	.03
Child → Adult/Child	2	.07
Child → Child	2	.07
Child → Unclassifiable	4	.15
Adult/Child → Adult	2	.07
Adult/Child → Adult/Child	9	.30
Adult/Child → Child	1	.03
Adult/Child → Unclassifiable	5	.17

Comparison: Successful vs Unsuccessful Participants

1. Demographic and offence data.

A *post hoc* partition was made between those participants who were successful in recording a post-treatment reduction in deviant arousal (i.e., less than 30% mean of peaks score to all categories of deviant arousal) and those who were not successful. The demographic and offence-related data for each of these two groups was then compared by ANOVA. This did not reveal any significant differences between the groups, although the difference regarding the number of men who had commenced offending before age 20 approached significance, $F(1,14) = 2.8$, $p = .06$.

Demographic and offence-related data on these two groups are reported below in Table 12.

Table 12
Demographic data, successful vs unsuccessful cases

	Successful (n=15)	Unsuccessful (n=15)
Age		
Mean	44.3	37.0
SD	10.22	11.38
Post-primary education (years)		
Mean	2.9	2.4
SD	1.62	1.84
Marital status		
Single:	2	6
Married/De		
facto:	8	7
Sep./Divorced:	5	2
Occupational level		
Prof./Managerial	2	2
Other w. collar	0	1
Clerical	3	1
Trades	6	5
Unskilled	3	0
Unemployed	1	4
Other beneficiary	0	2
Intelligence		
Mean	103.7	99.5
SD	10.85	13.71
Sexual orientation		
Heterosexual	10	9
Homosexual	4	5
Bisexual	1	1

Table 13

Personal and offence-related data, successful vs unsuccessful cases

	Successful (n=15)	Unsuccessful (n=15)
Exposure to Pornography		
Nil/minor	10	6
Occasional	3	5
Extensive	2	4
Has other paraphilias	5	7
Was sexually abused in childhood	9	11
Length of sentence (months)		
Mean	32.5	34.6
SD	17.63	13.09
Months in prison		
Mean	10.06	10.2
SD	14.49	8.06
Has previous convictions (sex)	3	6
Duration of offending career (years)		
Mean	11.3	14.7
SD	10.64	9.09
Offending commenced prior to age 20	6	11
Number of victims (self-report)		
Mean	4.2	15.3
SD	5.88	24.11
Gender of victim(s)		
Male	3	5
Female	10	5
Both	2	5
Age of victim(s)		
Mean	9.9	10.2
SD	2.67	3.78
Relationship to victim(s)		
Intra-familial	6	2
Extra-familial	9	13

2. Pornography use.

To investigate any potential relationship between prior exposure to pornography and habituation to adult stimuli, participants were again divided, this time into two groups according to their post-treatment responses to *adult* stimuli. Their different patterns of prior pornography use were compared. Chi-square analysis, after combining the "occasional" cells with the "extensive" cells and comparing these "nil/minor" cells, reveals a coefficient of 1.88 (5% significance requires a coefficient of 3.84 with 1 df): that is, no significant difference was found. The frequencies are depicted below in Table 14.

Table 14		
Exposure to pornography of participants with post-treatment adult arousal >30%, vs those with adult arousal <30%		
	>30% (n=14)	<30% (n=16)
Nil/minor	5	11
Occasional	6	2
Extensive	3	3

Validity of Phallometric Measures

It was hypothesised that participants' phallometric responses would correspond closely with their stated sexual orientation (*vis a vis* gender), and their actual offences with regard to age and gender of victims. To assess this, an analysis was made firstly of the degree of match between the higher of the participant's mean peak of arousal to adult stimuli (*vis a vis* gender) with his stated sexual orientation. Data from all assessments (pre- and post-treatment) were included, although individual data sets were excluded where the mean of peaks score was below 30% of full erection. The data for bi-sexual men (n=2) were also excluded. Analysis revealed a Chi-square coefficient of 8.09, $p = .04$. In terms of percentages,

phallometric assessment correctly classified sexual orientation of (non-bisexual) offenders on 74.5% of occasions. These data are reported in Table 15.

Table 15		
Agreement between stated sexual orientation and higher mean peak of arousal (gender) to adult stimuli		
	Heterosexual	Homosexual
Higher score to female stimuli	29	7
Higher score to male stimuli	6	9

Secondly, each participant's higher mean peak of arousal to deviant stimuli (*vis a vis* age and gender) was matched with his actual victims' age and gender. Data from all pre-treatment assessments only were included, with individual data sets excluded where the mean of peaks score was below 30% of full erection. The data for participants who had molested both male and female victims (n=7) were also excluded. Actual victims were classified as a child if they were aged up to 10 years (inclusive), and as teenage if aged between 11 and 15 years. By these definitions, no participants were known to have molested both teenage and child victims. For victim gender, analysis revealed a Chi-square coefficient of 30.29, $p = .0001$. In terms of percentages, phallometric assessment correctly identified the gender of an offender's victim on 93% of occasions. For victim age (teen versus child), analysis revealed a Chi-square coefficient of 1.72, $p = .19$. In terms of percentages, phallometric assessment correctly identified the age of an offender's victim on 50.9% of occasions. Table 16 summarises these data.

Table 16

Agreement between actual victim(s) characteristics and higher mean peak of arousal to deviant stimuli

	Female victim	Male victim
Higher score to female stimuli	28	2
Higher score to male stimuli	1	12
	Teenage victim	Child victim
Higher score to teenage victim	16	23
Higher score to child victim	2	11

Reliability of Phallometric Measures

Data from treatment groups two and three only are utilised in this section.

1. Percentage scores.

It was hypothesised that participants' sexual arousal to adult stimuli would, in the absence of any treatment intervention, remain relatively constant over repeated assessments, thus supporting the reliability hypothesis.

(i) Adult Arousal:

For each participant, his peak percentage arousal scores to adult stimuli were averaged, and analysis of variance conducted on each pair of scores. There was a non-significant difference in arousal levels between pre-treatment assessments 1 and 2 for group two, $F(1,9) = .69$, *ns*, and between assessments 1 and 3 for group three; $F(2,18) = 2.7$, *ns*. Visual inspection of Figure 1 suggests that arousal to adult stimuli for both groups two and three increased over the pre-treatment assessment

points - these changes were however non-significant.

Table 17 provides means and SDs of the adult arousal mean scores (these are also depicted above graphically in Figure 1).

Table 17						
Pre-treatment adult arousal mean of peak scores						
	Assessment 1		Assessment 2		Assessment 3	
	Mean	SD	Mean	SD	Mean	
Group 2	43.5	31.7	51.1	32.9	-	-
Group 3	28.8	11.6	40.1	19.7	48.1	22.7

(ii) Deviant Arousal:

Each participant's peak percentage arousal scores to deviant stimuli were averaged, and analysis of variance conducted on each pair of scores. There were no significant differences found between any of the pairings of pre-treatment arousal levels. Visual inspection of Figure 2 confirmed this, and was particularly striking for group three. This finding was in the expected direction. Table 18 provides means and SDs of the deviant arousal mean scores (these are also depicted above graphically in Figure 2).

Table 18						
Pre-treatment deviant arousal mean of peak scores						
	Assessment 1		Assessment 2		Assessment 3	
	Mean	SD	Mean	SD	Mean	SD
Group 2	72.6	23.4	65.4	27.9	-	-
Group 3	56.4	21.4	53.3	27.4	52.4	28.9

2. Ratio scores.

It was hypothesised that participants' ratio scores (which represent relative levels of deviant to adult arousal), in the absence of any treatment intervention, would remain constant over repeated assessments.

In the manner described above, ratio scores were determined for each participant, and pairs of scores then subjected to analysis of variance. Ratios for both groups followed a downward trend over time prior to treatment. There was a significant difference in ratio scores between pre-treatment assessments 1 and 2 for group three, $F(2,9) = 7.9, p = .02$. *Post hoc* tests (Fisher's PLSD) suggest that there was a change in the relative levels of adult versus deviant arousal for participants in group three in the first month of the assessment phase. No other significant differences were found between others of the pairings of pre-treatment ratios.

Table 19 provides means and SDs of the ratio scores (these are also depicted above graphically in Figure 3).

Table 19						
Pre-treatment ratio scores						
	Assessment 1		Assessment 2		Assessment 3	
	Mean	SD	Mean	SD	Mean	SD
Group 2	1.95	.81	1.41	.73	-	-
Group 3	2.16	.55	1.46	.74	1.57	1.42

3. Profiles.

As described above, individual data sets for each participant, and from each pre-treatment assessment, were classified as "adult", "adult/child" or "child" (rules for classification are described above in the Method section). It was hypothesised that participants' profiles would, in the absence of any treatment intervention, remain relatively stable over repeated assessments.

The possible categories of transition were listed, and the number of discrete transitions corresponding to each counted. The raw frequencies were then converted to probabilities. Transitions to or from unclassifiable profiles were omitted.

The figures generated by this analysis suggest that instability was as likely to occur as stability in pre-treatment transitions. Though half of the transitions (15) entailed identical profiles, half were different. However, the majority of these latter transitions were partial (i.e., C → AC or *vice versa*) - only 3 transitions were to a totally different profile (e.g., C → A).

Table 20 summarises these frequencies and probabilities.

Table 20
Pre-treatment profile transitions

	Frequency	Probability
Adult → Adult	1	.03
Adult → Child	1	.03
Child → Adult	1	.03
Child → Adult/Child	5	.17
Child → Child	3	.10
Child → Unclassifiable	1	.03
Adult/Child → Adult	4	.15
Adult/Child → Adult/Child	11	.37
Adult/Child → Child	2	.07
Unclassifiable → Adult/Child	1	.03

Pre-treatment profiles were further classified according to age of target in deviant categories (i.e., teen versus child), generating four different profiles - Teen (T), Child (C), Teen/Child (TC), and Unclassifiable (U). Valid profiles with deviant arousal scores below criterion (i.e., adult arousal > 30%, deviant arousal < 30%) were treated as Unclassifiable.

The transitions were then analyzed in the same manner as described in the previous section. The figures indicate, in the main, relative stability: TC → TC, C → C, and T → T (i.e., stable transitions) had a combined probability of .47, with TC → C, T → TC, and C → TC having a combined probability of .27. There were no recorded cases of a C → T (or *vice versa*) transition.

Table 21 summarises these frequencies and probabilities.

Table 21
Pre-treatment profile transitions (deviant age)

	Frequency	Probability
Teen → Teen	0	0.0
Teen → Teen/Child	3	.10
Teen → Child	0	0.0
Teen/Child → Teen	3	.10
Teen/Child → Teen/Child	13	.43
Teen/Child → Unclassifiable	4	.13
Child → Teen	0	0.0
Child → Teen/Child	1	.03
Child → Child	1	.03
Child → Unclassifiable	5	.17

Finally, pre-treatment profiles were classified according to gender of target in both deviant and non-deviant categories. In the first instance, deviant arousal was examined in order to classify the profile as "male only" (M), "female only" (F), or towards both male and female (B). The transitional probabilities were then computed in the same manner as described above. All transitions to or from unclassifiable profiles were excluded. However, where deviant arousal persisted after treatment, these transitions have also been included in this analysis.

For gender preference within deviant age scores, the figures indicate relative stability: M → M, F → F, and B → B transitions accounted for 65% of transitions.

Table 22 summarises these frequencies and probabilities.

Table 22
Profile transitions (gender preference, deviant age)

	Frequency	Probability
Male → Male	1	.03
Male → Female	1	.03
Male → Both	2	.06
Female → Female	12	.39
Female → Male	1	.03
Female → Both	1	.03
Both → Male	0	0.0
Both → Female	7	.23
Both → Both	7	.23

Next, adult arousal was used as a basis for classifying profiles as M, F, or B. The transitional probabilities were then computed. All transitions to or from unclassifiable profiles were excluded; post-treatment profiles were included, as treatment did not seek to target this variable.

For adult gender preference, the figures indicate relative stability: M → M, F → F, and B → B transitions accounted for 65% of transitions.

Table 23 summarises these frequencies and probabilities.

Table 23
Profile transitions (adult gender)

	Frequency	Probability
Male → Male	0	0.0
Male → Female	1	.04
Male → Both	2	.08
Female → Female	11	.42
Female → Male	1	.04
Female → Both	3	.12
Both → Male	1	.04
Both → Female	1	.04
Both → Both	6	.23

4. Correlations

As a final test for reliability, correlational coefficients were computed for the entire pre-treatment data set. Test-retest pairings of scores included the three dependent measures, adult mean of peaks scores, deviant mean of peaks, and ratios. For example, with adult arousal, group two's individual scores for assessment one and two were combined with group three's data from assessments one and two, and two and three. These pairings were subjected to correlation analysis. This revealed reliability coefficients as follows: Adult arousal $r = .44$; Deviant arousal $r = .65$; Ratio scores $r = .26$.

CHAPTER EIGHT

DISCUSSION

Aims of the Present Study

This study primarily sought to evaluate the effectiveness of a treatment procedure designed to recondition the sexual arousal responses of child molesters. The treatment procedure was based on two assumptions. The first of these is that sexual preference for children in adult males bears a causal relationship with sexual offending against children. The second assumption is that this sexual preference is a conditioned phenomenon, and is modifiable. The procedure was designed to achieve two related goals. The first was to increase participants' sexual responsiveness to adult stimuli by conditioning an association between states of sexual arousal, on the one hand, and images of socially appropriate sexual interaction with adult partners, on the other. This conditioning was to be brought about by having the participant repeatedly pair images and fantasies of such interactions with an internal state characterised by a high level of sexual arousal, pleasure and orgasm. The second goal was to reduce participants' sexual responsiveness to child sexual stimuli, by weakening the positive associative link between sexual arousal and images and fantasies of sexual acts with children. This was to be achieved by having the offender repeatedly pair these preferred images and fantasies of children with a internal state characterised by very low sexual arousal and boredom.

It was also of interest to investigate the concurrent validity of phallometric assessment, in particular the extent to which the arousal responses of offenders matched their sexual orientation and actual victim characteristics.

Finally, because of the nature of the experimental design, the study was able to generate data relevant to the reliability of phallometry. Both phallometry and sexual arousal reconditioning procedures assume that sexual preference is a trait-like phenomenon (although this assumption was not tested here, it is discussed below). It was therefore of interest to investigate whether this trait could reliably be measured by phallometry.

Treatment Effectiveness

1. Adult arousal.

The adult arousal data, for the majority of participants, indicated a failure of the treatment procedure to enhance arousal towards adult sexual stimuli. In fact, some participants exhibited levels of arousal in response to appropriate stimuli that were *lower* than levels recorded prior to treatment. For others, adult arousal remained unchanged from pre-treatment levels. With regard to profiles, the expectation was that profiles of participants would, following treatment, change from "adult/child" and "child" profiles to "adult". However, in all groups there were disappointingly low numbers of participants who achieved this hoped-for adult profile after completing treatment (one participant in each group) - the probability of a participant making this transition was thus .10. In group one, the majority of participants, following treatment, recorded response sets that were unclassifiable because of generally low arousal. Perhaps the most positive thing that can be said of the combined post-treatment profiles is that fourteen of the thirty participants were at least exhibiting arousal to adults (though just three of these to adults only), another twelve were showing no arousal to children (though not to adults either), and only four participants

were exhibiting arousal to children only³.

Possible explanations for these findings can roughly be divided between those that assume the validity of the data (i.e., that the data do in fact represent the participant's actual sexual interests at the time of the assessment, as indicating the post-treatment level of sexual interest in adults being either unchanged or diminished) and those that question it. If the assumption of validity is granted, a number of potential interpretations follow. Firstly, it may have been that participants failed to comply with the instructions for directed masturbation. For example, participants may have simply refrained from engaging in adult fantasies during this part of the procedure. At worst, some may have actually utilised deviant fantasies, perhaps in order to achieve orgasm as rapidly as possible. This explanation is difficult to evaluate, because controls for compliance, such as were used during verbal satiation, were not implemented. Participants were carefully informed of the need to ensure that appropriate fantasy alone should be used at this stage, and when completed tapes and monitoring forms were turned in, enquiries were made concerning any difficulties they may have been experiencing. However, their compliance with the instructions largely had to be taken on trust. As stated above, it was believed that requiring the participant to verbalise his adult fantasy was not desirable, given concerns that this might have a negative effect on the positive valencing of these fantasies.

In any case, even were participants required to verbalise and tape-record their appropriate fantasies, there is no way of ascertaining that this behaviour actually coincided with masturbation to orgasm. The reliance on self-report alone in ensuring satisfactory compliance with treatment instructions for directed masturbation is thus a

³ Interestingly, it may arguably be that a non-responding profile is a positive clinical outcome: research findings were presented to a recent international conference which appear to indicate that even adult arousal evident at post-treatment is associated with increased risk of recidivism (S. Hudson, personal communication, 1995).

weakness of this study, and of the treatment procedure itself. It is difficult, however, to envisage ways in which this problem could be overcome. Perhaps the highest level of certainty might be gained from a procedure in which pre-prepared (either audio- or videotaped, or printed) adult sexual material was made available, and the person monitored while masturbating during presentation of such material. However, ethical guidelines which govern both research and therapeutic activity probably would not permit invasive procedures such as direct observation of masturbatory behaviour.

Another possible explanation for these findings is that the verbal satiation procedure, which immediately followed the directed masturbation process, created an aversive conditioning effect, thereby decreasing responsiveness to both deviant and non-deviant stimuli. This hypothesis might explain the data of the small number of participants who, while responding to adult stimuli prior to treatment, failed subsequently to show adult arousal at the post-treatment assessment. The shape of the curve for group three's adult arousal scores (increasing across pre-treatment assessments, then decreasing sharply after treatment) seems to suggest that the treatment procedure had an untoward effect upon adult arousal. However, this hypothesis is not consistent with the findings of Laws et al., (1987), who required their sex offender subjects to actively masturbate their flaccid penises during verbal satiation, a requirement that, if anything, probably added to the aversiveness of the procedure. They nevertheless observed increased appropriate arousal with a number of their subjects.

A number of alternative explanations for these findings exist, which share the implication that the data lack validity. It may have been that the apparent reduction in appropriate arousal simply reflected a different responsiveness to adult (versus child) stimuli. Wormith (1986) has suggested that offenders may respond more discriminatingly to adult models and be more influenced by their specific characteristics, while responses to children are independent of the model's individual

characteristics. Clinical experience has shown that offenders not infrequently report the specific adult models used in assessment stimuli lack appeal to them. Negative comments about particular features (facial attractiveness, body size and shape, hair colour, etc.) may be offered about such images. Comments of this type, however, are seldom made in respect of child models - apparently the appeal of these tends to be more of a categorical, "all or nothing", phenomenon⁴.

An implication of this line of thought is that phallometry, as it was conducted here, is a more valid measurement of sexual interest in children than it is of sexual interest in adults. Attempts to compensate for this difference in responsiveness presumably would require either presentation of a much wider range of adult stimuli, or, prior to the assessment proper, establishing an individualised adult stimulus set that was rated as sufficiently attractive by each participant. Nevertheless, the trends in the data do not fit neatly with this explanation, which would seem to require uniformly low levels of responding to the adult stimuli across assessments. This was not the case - what was observed, in the main, was a decline in responding only *after* treatment.

As has been discussed above, stimulus habituation is an important consideration where repeated measures of conditioned phenomena are used, and should be considered in relation to the finding of decreased arousal to adult stimuli. Habituation might imply that extent of prior exposure to sexually explicit material was a factor in these findings. Experience with offenders suggests that many report extensive exposure to adult pornography, but only a very small minority acknowledge having ever seen child pornography. Though enquiries were not made concerning the

⁴ It may be however that comments made by offenders regarding the low appeal of adult stimuli are attempts to rationalise a non-response to such stimuli, no such explanation being felt necessary for a non-response to any individual child stimulus.

nature (child versus adult) of the pornographic material to which participants had exposure, the assessment procedure may have been experienced by most as exposure to novel (child) stimuli, as well as to adult stimuli of a type with which most were already well-accustomed. Hence, they may have more rapidly habituated to adult images than to the (presumably) more novel child ones, thus accounting for the decrease in adult responses over pre- and post-treatment assessments. However, against this interpretation is the finding that participants exhibiting post-treatment arousal to adult stimuli were, if anything, *more* likely to report occasional or extensive prior exposure to pornography; those with less exposure were more likely to exhibit a post-treatment decline in arousal to adult stimuli (the trend however was not statistically significant). Further, habituation presumably would also require a gradual decline in responding over assessments. The data were not uniformly consistent with this. In fact, groups two and three demonstrated almost the opposite: *increases* across pre-treatment assessments, followed either by no change at post-treatment (group two), or a decline (albeit non-significant) at that point (group three).

Thirdly, there is the possibility that participants became more adept at achieving voluntary control over arousal with each successive assessment. This is unlikely, however, particularly with responses to adult stimuli: it is difficult to imagine a motive for participants selectively suppressing arousal to adult themes, given demand characteristics that would predict the opposite effect.

In summary then, there was an apparent failure of the treatment procedure to enhance arousal to adult stimuli. Faking can probably be dismissed as providing an explanation for this finding. That the adult stimulus set lacked appeal, or that there was habituation to these stimuli, appear also to lack support. The possibility that the treatment procedure itself had a suppressant effect on adult arousal cannot entirely be ruled out, nor can the remaining alternative, that participants did not comply with

the treatment instructions. It may of course be the case that, though theoretically coherent, in practice directed masturbation simply does not work!

The finding of unchanged or diminished arousal to adult stimuli is concerning from the point of view of re-offence risk. Low arousal to adult stimuli exhibited during phallometric assessment suggests that the individual is likely to be poorly motivated to seek sexual intimacy with adult partners, or to experience humiliating erectile difficulties in any such relationship. However, this deduction requires cautious consideration in the present situation. The fact is that the majority of these men had at one time been married or in a long-term adult relationship. None reported a history of erectile dysfunction. There is probably a danger here of "overinterpreting" these data. After all, for a heterosexual participant, the adult arousal data represent his erection responses to two two-minute audiotaped sexual scenarios with accompanying slides of a nude female. Whereas the connection between deviant arousal and offending is relatively well-established, there is considerably less justification for concluding that low arousal responses to a couple of adult-oriented stimuli signify either an absence of desire for, or an inability to function sexually within, an adult sexual relationship.

2. Deviant arousal.

In regard to impact of treatment upon deviant arousal, the data indicate that, following the treatment procedure, there was a decline in levels of deviant arousal - all groups showed a statistically significant reduction. The magnitude of the decline was, however, of moderate proportions only. Though one might reasonably conclude that this outcome is attributable to the treatment procedure, other explanations must also be considered. The effects of habituation on responding is of course an important issue whenever there are repeated measures of this type. As discussed

above, several investigators (e.g., Wormith, 1986) have raised the issue that repeated measurements may be subject to either habituation or learned response control. A gradual decline in levels of response over successive assessments would be consistent with this hypothesis. However, the study's multiple base-line, across-groups design provides adequate control for this factor. Deviant arousal declined immediately for group one, but remained relatively stable across repeated pre-treatment assessments for groups two and three, and then declined significantly only *after* treatment had been completed.

The ratio scores for group three, however, do not unequivocally support a treatment effect. The pre- and post-treatment ratios for this group were almost identical: insofar as deviant arousal declined, there was an associated decline in adult arousal. Unless it is argued that the treatment procedure had an (unintended) negative impact on adult arousal, the ratio scores for group three might suggest a simple habituation explanation. However, as noted above, this conclusion is inconsistent with the finding of (albeit non-significantly) increased adult arousal over the pre-treatment assessments.

Also problematic to an optimistic interpretation of the finding with regard to deviant arousal is the sizeable number of participants (12, or 40%) who generated a non-responding profile at the post-treatment assessment. Eight of these were in the first treatment group - and the decrease in deviant arousal for this group was significantly greater than that recorded for either of the other two groups. On the one hand, the apparent lack of response towards child stimuli is hopeful, but would have been considerably more encouraging had it not been accompanied by the corresponding reduction in arousal to adults. Indeed, several of these participants had, prior to treatment, demonstrated some degree of adult arousal. The uniformly low level of responding amongst this group raises the possibility that such participants were at

the time of the post-treatment assessment either in a temporary state of low "arousability" or were exercising voluntary control over their responses.

Clearly participants were, to some extent, arousable, as a full erection response measure was obtained from each at one point during each assessment. The possibility must be considered then that the phallometric responses of some participants were faked, particularly those of participants who exhibited reductions in deviant arousal at the post-treatment assessment. As discussed above, there are a number of ways in which faked responses can be achieved. For example, a participant may have exhibited a non-deviant response simply by failing to attend to the stimulus array. That can be done simply by closing eyes, looking away from the slide projection, or even de-focusing gaze. The auditory stimuli might have been attenuated by the participant placing his fingers over his ears. Both visual and auditory stimuli may have been excluded by redirecting his attention, for example, by engaging in a mentally demanding task or by fantasising over something unpleasant or frightening.

It might be argued however that, to an extent, voluntary suppression of deviant responses by participants in a sense constitutes a positive treatment outcome. A fundamental tenet of sex offender treatment is the "control, not cure" maxim. Participants who exhibited deviant responses during pre-treatment assessments and then were able to not do so subsequently have presumably learned *something*. Insofar as the learned response is that of suppressing responding to deviant stimuli, then this outcome can be seen as having some positive features.

It is unlikely that participants were highly motivated to falsify their responses. All understood they were taking part in a study to evaluate the treatment procedure, but there were no obvious objective incentives to fake responses, as no major

contingencies hinged on the outcome of each assessment. Participants understood that involvement in the study did not exempt them from undergoing the same treatment procedures once they had commenced the programme proper. Consequently, they were aware that their post-treatment responses from the study itself were not utilisable for ultimate treatment outcome evaluation and parole recommendations. Subjective incentives, or demand characteristics, may have been operating, however, such as a participant's wish to assure himself that his responses were no longer abnormal, and/or the desire to please the experimenter.

The only controls against faking in this study were the scrutinising of the computer-generated graph (to detect possible signs of manual manipulation of the penis or gauge), and those efforts made at the outset of each assessment to impress upon participants the desirability of an honest response. There are of course no adequate controls available for this problem. The more gross forms of faking such as averting gaze or blocking the ears can be detected (and presumably discouraged) by use of video surveillance, but there are no simple ways to control for a participant's shifts in attention. As described above, attempts to place checks on the participant's level of attention to the stimulus, such as requiring a verbal commentary of the stimulus array, have served only to interfere with and suppress arousal responses (Henson & Rubin, 1971). Video surveillance is not without problems itself, as it is intrusive and tends to generate anxiety and defensiveness in some clients. Overall, the strongest argument against the possibility of faking by participants is the data - they are simply not that good!

If it is accepted that the treatment procedure does in fact impact on deviant arousal, then the fact that this reduction in deviant arousal was only moderate has a number of potential implications. Firstly, the procedure (verbal satiation) may in principle be effective in reducing deviant sexual arousal, but not within the parameters utilised in

this study. For example, it might reasonably be contended that a treatment intervention consisting of eight 20-minute reconditioning sessions is simply insufficient to achieve the desired effect. Interestingly, this notion is supported by the finding that the number of treatment sessions performed by participants in group one was significantly greater than the number for the other two groups (the mean time period spent in performing satiation was also 20% longer), with this group recording a considerably greater mean reduction in deviant responding post-treatment, compared to the other groups.

Secondly, it may be that the procedure of simple verbal satiation is in fact less "potent" than masturbatory satiation. These questions will require further research; for example, the magnitude of the treatment effect obtained with longer and/or more frequent satiation sessions, or where the participant masturbates his flaccid penis while verbalising his deviant fantasies, might be compared with the treatment effect gained via less demanding procedures (such as those utilised here).

The rather moderate treatment effect may also have occurred because participants did not comply fully with the prescribed treatment regime. The procedure is, after all, designed to be somewhat aversive, which makes it more likely that participants may have struggled to summon the motivation to engage fully in the treatment procedure. It is possible, for example, that some participants recorded satiation tapes when they were not in a post-orgasmic refractory state, or compiled the 20 minute tape in brief segments over a much longer period. A worst-case scenario is that, at such times, they were in fact allowing themselves to become positively aroused by the verbalisation of deviant fantasy material. Another (perhaps exotic) possibility is that a participant recorded one session on both the supplied dictaphone as well as another tape recorder, and then later used the second recording to re-record bogus sessions. The experimenter would have been hard-pressed to detect identical tapes presented several days apart.

In response to these possibilities, however, it seems reasonable to assert that the compliance checks utilised here were relatively substantial. All satiation sessions were tape-recorded, and the resulting tape thoroughly checked. Participants were also required to complete a comprehensive written diary recording the time and duration of each component of the treatment procedure.

It must be acknowledged that any procedure such as this, insofar as it relies on masturbatory behaviour, for obvious ethical reasons can only be practised under circumstances that do not allow for firsthand verification. Though it is possible that a higher level of monitoring might be achieved by having the participant perform the procedure in a laboratory, this presumably would still have to stop short of direct observation, at least of the directed masturbation procedure. Such a requirement would also be extremely time-consuming for treatment staff. In a treatment programme such as that operated at Rolleston Prison, a substantial number of men are engaged in this type of treatment at any one time, and the logistics of having each of these men perform each of his treatment sessions under this type of monitoring are impractical. Thus, the necessity of having the client perform the treatment "on trust" appears to be an unavoidable feature of the treatment itself, and must therefore be accepted as a "given" in evaluating the procedure - a view shared by Laws and Marshall (1991). Under these constraints, the use of the dictaphone, and the maintenance of the record form, are probably as much as is realistic in terms of encouraging compliance. Further intrusions designed to monitor compliance run the risk of making the procedure so unwieldy and demanding that no-one - client or clinician - would be prepared to countenance its use.

What has been demonstrated here is a statistically significant reduction in deviant responding within each treatment group. Perhaps the most important issue in interpreting these results is that of their *clinical* significance. With regard to the

treatment outcome formula proposed by Jacobson, to which reference has been made above (Jacobson & Revensdorf, 1988), what can be said of the treatment outcome data here? Firstly, only a small minority of participants (3) recorded post-treatment deviant scores that were more than two standard deviations below the mean for pre-treatment arousal. The scores of another 16 participants were between one and two standard deviations below the pre-treatment mean, although from the perspective of risk assessment it is less clear whether erection responses of this magnitude to deviant stimuli ought permit an optimistic interpretation.

Disregarding Jacobson's formula for the moment, 30% of full erection has also been considered a useful cut-off (Marshall, personal communication, 1989). This position is justified on the basis that random fluctuations, residual tumescence from previous stimulus presentations, and other variables make interpretations of data below this level unreliable. Scores below 30% then might be taken as signifying a positive treatment outcome. Exactly half of the sample (15) recorded post-treatment data indicating adequate reductions in deviant arousal using this principle (i.e., mean of peaks scores below 30% for all deviant categories).

Thus, from the point of view of a statistically significant change between pre- and post-treatment levels of deviant arousal, results indicate the treatment techniques to have been effective. Using cut-off points, the outcome is less positive. As a more stringent criterion, Jacobson's formula appears to suggest a poor treatment outcome. The picture is somewhat less bleak if Marshall's 30% cut-off is employed.

As a footnote to this analysis, it was of interest to compare the characteristics of the group who did succeed in reducing their deviant arousal (by Marshall's criterion) with those who did not. In doing so, no statistically significant differences were found. However, visual inspection of the data tables suggests that the offender more likely

to achieve a reduction in deviant arousal is older, more intelligent and better educated, has a shorter offending history with fewer victims and convictions. He is more likely to be an intra-familial offender. He is less sexually aberrant generally, in that he has had less exposure to pornography and is less likely to have other paraphilias.

Validity of Phallometry

As has been discussed in the review of the literature, phallometry is regarded as having validity given that high correlations have been found between the arousal responses of adult males and their sexual orientation, and between offenders' arousal responses and the age and gender of their victims. An attempt was made here to replicate these findings.

Phallometric assessment proved to be most accurate in correctly identifying the gender of the participants' victim (93% accuracy). It is noteworthy here that the two profiles demonstrating female-oriented arousal by a male-victim offender occurred with one anomalous individual. Convicted of the forceful sexual violation of a male child, there was a good deal of evidence (in addition to his phallometric responses) to suggest that he did in fact have a substantial (but unproven) history of offending against female children. Thus the level of accuracy of phallometry on this dimension was probably even higher than 93%.

Accuracy was lower in classifying participants according to (adult) sexual orientation (75%), and quite poor in identifying the age bracket within which his actual victim fell (c. 50%). The latter is however not strikingly lower than the 77% success rate for classifying offenders as hebephilic or pedophilic on the basis of arousal scores achieved by Freund et al., (1979). Interestingly, the most common misclassification here (with regard to victim age) was with those who had molested children under the

age of eleven years and who exhibited higher arousal to teenage stimuli. It may be that the phallometric data do in fact represent the participant's true sexual interests; those with higher arousal to teenage children who offended against younger children may have selected their actual victims on the basis of opportunity or availability, rather than preference. Younger children perhaps may more easily be manipulated and controlled by offenders, thereby increasing their vulnerability to being targeted. It would appear then that phallometry is not particularly accurate in differentiating "hebephilic" from "pedophilic" (to use Freund's terminology) offenders, hence inferences based on differential responding between these categories are therefore probably not supportable.

The rather less than perfect agreement between stated sexual orientation and adult arousal responses is also interesting. It is consistent with a clinical observation made with child sexual offenders that the lack of discrimination in choice of sexual partner may be more general and not confined to their pedophilic behaviour. Homosexual behaviour is of course a feature of all prison populations, and may play a role in the finding of homosexual arousal in heterosexual men. However, this tendency may be amplified with this group, given that aberrant sexuality is a defining feature.

A number of the participants in this study appeared to conform to what Seligman (1994) described as the "optional bi-sexual", defined as an essentially heterosexual individual who engages in adult homosexual contact for reasons independent of orientation *per se*. Consequently, they may well exhibit high levels of arousal towards male adult stimuli because, for whatever reasons, they have found sexual contact of this type reinforcing.

The most important aspect of validity is of course predictive validity - the extent to which the measure correlates with future behaviour. In this regard, an interesting finding has emerged with the present sample. At time of writing (June, 1995), 29 of

the 30 men had been at large for periods averaging 38 months (one is serving an indefinite sentence, and has repeatedly been refused parole). Of these 29 men, three have been reconvicted of a new sexual offence after release. All three had exhibited their highest (pre-treatment) peaks of arousal to teenage boys, and all three indeed went on to offend against teenage boys. Ominously, the post-treatment responses to these same stimuli for all three were low (mean of peaks < 30%). This finding is consistent with various studies (e.g., McLean & Rush, 1990) which indicate that, when child molesters are classified according to age and gender of victim, molesters of teenage male victims have the highest recidivism rates. It also confirms findings made elsewhere (e.g., Rice et al., 1991) that, while pre-treatment deviant arousal predicts a negative outcome, low levels of arousal at post-treatment appear to be unrelated to outcome.

Reliability of Phallometry

The perceived utility of phallometry is based on a conceptualisation of deviant sexual preference as a stable, trait-like tendency to become sexually aroused to a specific class of sexual stimuli. This tendency, it is assumed, can be repeatedly measured over time, and incremental and decremental changes mapped. If the stable trait conceptualisation is for present purposes accepted, then the data offer a mixture of positive and negative evidence in relation to the reliability of phallometry.

Perhaps most relevant to this question are the response profiles, and the analysis of conditional probabilities (i.e., the probability that a profile will remain the same from one assessment to the next). This approach revealed some fluctuation across pre-treatment assessments. Using the basic profile classification (adult, adult/child, or child), half of the transitions were to a different profile from that of the preceding assessment. However, when a difference between profiles occurred at a transition,

that difference was seldom complete: a child profile typically became an adult/child profile (or *vice versa*); only in a small number of cases were child → adult, or adult → child transitions recorded. Similar findings were made when other profile classifications were tracked across assessments: age category of deviant target (i.e., child, teen) were largely consistent, as were gender of both deviant and non-deviant stimuli. There were however a number of adult/child → adult transitions (4), which is a little more problematic in that critically important information (i.e., the presence, and strength, of deviant arousal) is somehow being "lost" at certain assessment points.

In summary, profile analysis yielded limited support for the reliability of phallometry, indicating that the same, or relatively similar, response profiles were predictable across repeated assessments.

Ratios scores have been considered to be a useful control against the effects of habituation. Assuming that habituation to adult and child stimuli occurs at the same rate (this notion has been commented on above), ratios should remain constant in the face of gradual decline in response magnitude, and this constancy, if it is found, in turn would strongly support the reliability of phallometry. However, the trends in the child/adult ratios here were quite unstable, with significant declines occurring from the first to the second assessment. This appears to have been the result, for both groups, of unexpected increases in mean arousal to adult stimuli at subsequent (pre-treatment) assessments.

These changes were mirrored in part by the finding of only moderate correlations between successive assessment scores. Though the coefficients found for deviant stimuli were higher than for adult stimuli (a finding which confirms that of Wormith (1986), and supports also the opinion noted above that phallometric assessment may be a more valid measure of deviant arousal than it is of adult arousal), they were

nevertheless not impressive. The coefficients are quite similar to those reported by Krisak, Murphy, and Stalgaitis (1981) and Davidson & Malcolm (1985) whose studies involved rapists, and Wormith's (1986) also, who assessed child molesters. In regard to correlation between ratio scores, the coefficient derived from the present data is so low (.26) as to suggest a high level of instability, and to warrant serious reservations about the utility of this particular data form.

Why should such instability occur? One issue affecting reliability is that of the general "arousability" of participants. Clearly a number of situational factors comes into play in influencing a person's readiness to become aroused at any single point in time. For the participant in this study, these factors may have included his emotional state at the time (given that inmates detained in prison will of course be prone to depressed or anxious mood), his current attitude (positive or negative) towards the assessment (and/or the assessor), and the interval since last orgasm/ejaculation. In regard to the latter, though participants were asked to refrain from masturbating during the 24 hours preceding each assessment, there was no practical way of verifying this, and an unfortunate effect of giving this instruction was that it may have cued participants to the very idea that "pre-emptive" masturbation might offer an effective strategy for producing a more socially desirable response. Therefore, though a carefully standardised assessment procedure was rigidly adhered to, temporal intra-personal factors such as the above may potentially have impacted on the data nevertheless.

Though the data (and the literature) provide evidence supporting the external validity of the procedure, there remain questions over what exactly is being measured during phallometric assessment. As has been stated above, a central assumption of phallometry is that sexual preference is a stable, trait-like characteristic inherent to the individual; when exposed to stimuli that are consistent with this preference, the

individual supposedly reacts reflexively by becoming sexually aroused. Unreliability of measurement, within this perspective, intrudes from a variety of situational and temporary sources (e.g., nature, quality and modality of stimulus material, fatigue, motivational factors, to name a few).

However, an opposing hypothesis is that sexual arousal is itself more of a state-like, situationally determined, phenomenon. It may be, for instance, that a critical factor in producing sexual arousal is the extent to which the person actively engages in fantasy elaboration while attending to the stimulus array. Different arousal profiles thus would reflect participants' differing *propensities* to engage in such fantasies. An individual's propensity might be influenced by his willingness to comply with the task, his capacity to invoke mental images, the relative vividness of these, and so on.

In the present study, the instruction given to participants prior to each assessment was to "... keep your eyes on the screen in front of you ... listen to the story, and imagine as well as you can that it is you in the story ... that you are doing the things described in the story". Thus, participants were requested to engage literally as *participant* in a specific fantasy, and for sustained periods of time. It is unclear what the consequences may be of failure to engage fully, or at all, in this task. It seems possible that someone might only passively attend to the stimulus presentation (spectatoring), without engaging in a fantasy that it was he himself behaving sexually with the person depicted. Arousal responses might then remain low. Koukounas and Over (1993) found exactly this to be the case in their investigation: when their subjects shifted cognitively from the perspective of participant to that of spectator, their arousal responses decreased. Similarly, Dekker, Everaerd and Verhelst (1985), in presenting erotic stories to non-offenders, found significantly greater arousal responses when subjects attended to the sexual feelings they were having to the story (perhaps an equivalent to the participant fantasy), than when they attended solely to the stimulus material. Because these attentional variations cannot easily be

controlled for in a study of the present sort, it is difficult to gauge the extent to which such variables affect these data.

It follows from this principle that the variable which in fact produces a positive result (i.e., minimal arousal to deviant stimuli) is not a reconditioning of arousal responses but a change in the participant's propensity (or willingness) to actively engage in a participatory fantasy about that class of stimuli. The effect of the treatment procedure may be to motivate the participant to refrain from engaging in the fantasy task when confronted with a stimulus presentation (to become a passive spectator). To return to the issue of treatment effects, a further implication of this line of thought is that other means may just as effectively reduce the frequency with which offenders fantasise about deviant themes. Simply providing education concerning the potential dangers of such fantasy may be useful with some offenders (in the same way that a proportion of smokers seem able to quit after health warnings and advice from their doctor). Victim empathy training, and cognitive restructuring, which serve to impress upon the offender the damaging effects of sexual abuse on victims, may also be effective.

There are strong parallels between this line of thought and the disinhibition model of rape outlined by Barbaree and Marshall (1992). These authors proposed a model of sexual aggression against adult females that assumes the capacity to behave in a sexually aggressive manner is inherent in all males, and that the difference between rapists and non-offenders is that the latter inhibit these tendencies, while the rapist does not. In support of this notion Barbaree and Marshall present a wide range of research findings that demonstrated that arousal to rape cues can reliably be elicited with non-offenders when disinhibiting factors are applied. Effective disinhibitors include alcohol intoxication (Barbaree, Marshall, Yates, & Lightfoot, 1983), evoked anger towards a female (Yates, Barbaree, & Marshall, 1984), victim blame (Malamuth & Check, 1980), excuses for the rapist's behaviour (Barbaree & Seto,

1991) and exposure to pornography (Marshall, Seidman & Barbaree, 1991). Most interesting of all, however, was Barbaree and Murphy's (1991) study where non-rapists were presented with verbal descriptions of both consenting sexual activity and rape. One half of the sample were informed however that arousal to the rape episode was normal, that the subject should not worry about it, that arousal to such themes indicated nothing about the proclivity to engage in such behaviours. The subjects given these instructions showed disinhibited arousal to the rape stimuli, and reduced discrimination between rape and consenting cues, compared with those who were not instructed in this manner. In other words, *when given permission to feel aroused to rape cues*, non-offenders became aroused.

Barbaree and Marshall (1992) argued that there are probably different sub-types of rapists, and that no one model is adequate to account for them all. They accept that there is some evidence to support the notion of a "preferential" rapist (e.g., Quinsey, Chaplin, & Upfold, 1984) whose behaviour is best understood as a paraphilic sexual preference under the stimulus control of rape cues. However, the fact that some studies have shown rapists to have similar arousal responses to non-rapists (e.g., Baxter, Barbaree, & Marshall, 1986) indicates that variables other than stimulus control must be operating for some rapists.

In extending this line of thought to sex offenders against children, the idea arises then that perhaps a similar sub-division of offenders can be made. There are almost certainly those offenders whose sexual arousal to child cues is paraphilic in the sense of a conditioned sexual preference. These offenders (Hall and Hirschman's supposed "first sub-type") should demonstrate the most reliable responses during phallometric assessment, given that their arousal is understood to be of a conditioned, reflexive nature. Perhaps an examination of the backgrounds of these offenders would reveal critical experiences of a type that gave rise to this conditioned response, just as McGuire, Carlisle, and Young (1965) found with their paraphilics.

These offenders clearly would require "reconditioning" of their arousal responses. However, the deviant arousal responses of the remainder of offenders might better be viewed as "disinhibited" responding.

The most important disinhibiting factors that might apply with child sexual arousal might be the cognitive distortions held by offenders. These include distorted beliefs about a child's willingness to have sex (e.g., "she's a little temptress; "he knows what he wants - to have sex with me") and those about the supposed harmlessness (or even benefits) of the behaviour (e.g., "I am teaching him about sex"; "she seems to be enjoying this"). The etiological model of child sexual abuse that emerges from this concept is as follows: the person vulnerable to engaging in sexual offending against children is either blocked from meeting his social and sexual needs in normative ways, or finds intimate contact with children has some unique meaning for him that makes such contact gratifying. As a result, he may become attracted, in a general, non-sexual way, to children. Because of the male tendency to confuse sexual and emotional intimacy (Finkelhor, 1982), the offender then entertains fleeting sexual thoughts about a child. This is the critical juncture: sexual interaction ensues, or does not, depending on how the offender responds *cognitively* to these fleeting ideas. Offenders who, for whatever reasons, judge or interpret their sexual thoughts in a way that is permissive of sexual contact (such as with the kinds of beliefs listed above) fail to inhibit the arousal that results from the emergent fantasy about physical and intimate contact with the child, and may go on to offend. Those who do not hold such beliefs restrain themselves: when in situations when sexual thoughts about a child occur, the thinking of non-offenders centre on the vulnerability of the child, his/her need for protection, and other ideas about the inappropriateness and unacceptability of child sexual contact. Many non-offenders express the view, when the topic of child sexual abuse comes up, "I cannot imagine thinking that way about a child" - which may be the very reason why the person expressing this view is indeed a non-offender: he does not allow himself to entertain such thoughts.

To apply these ideas to phallometric assessment, the responses of child molesters to child stimuli might thus be understood as signifying the extent to which these men are "accustomed" to thinking sexual thoughts about children, the extent to which they permit themselves to engage in "participant" fantasies of such activity, and fail to inhibit the arousal that results from such activity. Phallometric assessment invites them to engage in this (by now, habitual) fantasy behaviour, the manifestation of which is an erectile response and sexual arousal. The non-offender, when presented with the same stimuli, is not accustomed to engaging in participatory fantasies about sexual activity with children, and reacts negatively to the stimuli. His emotional reaction is likely to be one of distaste, with thoughts of dismay about children being involved in sexual activity, and perhaps even feelings of fear and shame over any response that may be evoked. His cognitive stance throughout remains that of a spectator, and not a participant. The offender may possibly have some of these emotional reactions, but because of habitual patterns of fantasy, may find himself reflexively adopting the stance of the participant. This reflex is most likely to occur when (but is not necessarily limited to) the age and gender represented in the stimulus matches that of his actual victims, with whom he has previously fantasised about, and indeed has had actual sexual contact.

This perspective might shed light on the anomalous finding in the literature of absent or low levels of deviant arousal in incest offenders (though such arousal was found with several intra-familial offenders in the present sample). Conditioning theory does not exempt incest offenders from the acquisition of a conditioned sexual arousal response to children. Though these men may well have fewer victims (Gibbins, Soothill, & Way, 1978), actual incidents of offending (and thus, occasions of conditioning) may not necessarily be any less frequent than for extra-familial offenders. Perhaps the behaviour of the incest offender, as was argued by Hall and Hirschman (1991), is better understood as arising out of the specific cognitive distortions that the offender applies exclusively to his actual victim(s). When

presented (during phallometric assessment) with sexual stimuli of unrelated children, he is more likely to inhibit sexual arousal in the same way that non-offenders might. Clinical experience does in fact suggest that some incest offenders tend to look upon the classic "pedophile" offender in the same way that many non-offenders do - as though the latter's abusive behaviour was "unthinkable". Further, it has been repeatedly demonstrated that step-fathers are many times more likely to molest their daughters than are biological fathers. Martin et al., (1992), for example, found among their subjects reporting sexual abuse experiences that the incidence of abuse by biological fathers was 1-2%, but the rate of step-father abuse was around 10%. This difference is commonly understood to relate to the "failure of the incest taboo" (Finkelhor, 1984). Thus the step-father disinhibits his sexual arousal to his daughter perhaps by adopting distorted beliefs about the nature of their relationship ("she's not my flesh and blood", "we're in love"), beliefs that permit him both to accept his feelings of sexual attraction, and to act upon them. The biological father, on the other hand, is likely to face considerably greater inhibitory barriers to such as response, thus accounting for the lower incidence of this type of abuse.

Clearly, the instability of responding evidenced by the phallometric data of the present study mitigates against the conditioned arousal hypothesis. This concept of deviant sexual arousal predicts that when an appropriate CS is presented, the CR will occur in a reflexive manner. The data here do not support that hypothesis; what was found was that the exhibited response frequently could not be predicted.

From the disinhibition perspective, the issue of response faking takes on a different meaning. As has been discussed above, the possibility of faking has been regarded as an ever-present problem in phallometric assessment and a major source of unreliability, against which there are no reliable safeguards. However, the disinhibition hypothesis implies that the suppression of deviant arousal by an offender, insofar as it relies on some form of cognitive distraction, is an adaptive

response, and may well be indistinguishable in principle from a successful treatment outcome.

To revisit the treatment outcome data, it may be that the extremely low levels of response exhibited by some participants (such as those in group one) reflected the fact that, during reassessment, these individuals "abstained" from engaging in a participant fantasy of deviant sexual interaction. Though being contrary to instructions, this abstention may have occurred "in good faith", in that these individuals may have intuitively sensed that not fantasising was "appropriate", given the goals of treatment. On the other hand, the "problem" with those who did exhibit deviant arousal post-treatment, rather than being the demonstration of a treatment-resistant conditioned response, may have been that they simply followed instructions, and engaged in a participatory fantasy. The implication is therefore that, no matter how much "reconditioning" treatment these individuals engaged in, so long as participant fantasy occurred during subsequent phallometric assessment, a deviant arousal response would inevitably occur!

To revisit the reliability data, significant changes (either in the profile or in absolute levels of response) from one assessment to the next would indicate, for the non-paraphilic offender, his differing degrees of absorption in fantasy to each successive stimulus. Though there ought to be a tendency for roughly the same stimuli to capture his interest on successive assessments, he may also perhaps be inclined to engage more fully with different stimuli on different occasions - dependant on little other than his capricious whims of the moment.

These processes might be somewhat different for those individuals who have a genuine conditioned arousal response to deviant themes (i.e., a genuine paraphilic pedophile). When presented with an appropriate stimulus (a slide of, say, a pre-pubescent male) such individuals should (when untreated) find that reflexive arousal

occurs even in the absence of fantasy. Reconditioning procedures therefore are very suitable for these individuals, and should reduce their arousal to deviant themes. However, for the non-paraphilics, the critical issue surely is the interruption and suppression of fantasy to deviant cues.

As stated above, the phallometric procedure utilised here did not control for the degree to which participants complied with the instruction to "imagine that you are the person in the story, doing the things described ...". In regard to reliability, if it is the case that engagement in the task in this manner is central to generating a response, then phallometry as it was administered here must be viewed as inherently unreliable, as it does not provide adequate control for this dimension of attentional behaviour.

To summarise the, the data in this study thus provide only very limited support for the reliability of phallometry. Deviant arousal levels displayed adequate stability, and correlated reasonably highly with each other, across assessments. Adult arousal underwent substantial fluctuation, as did ratio scores, across repeated assessments. Correlations for repeated measures were not high. Lastly, arousal profiles, from one assessment point to the next, also demonstrated a moderate degree of instability. Inevitably, the unsteadiness in the measure reduces the confidence one might otherwise have in the treatment outcome data. More significantly, however, this instability raises important, and, as yet unresolved, issues about the validity of the constructs which underlie both phallometric assessment and arousal reconditioning procedures.

Limitations of the Study

A number of limitations were unavoidably placed upon this study because of its location within a prison environment, and the necessity of subordinating the

requirements of the project to those of the comprehensive treatment programme towards which all participants were destined. In regard to the latter issue, the need to control for the confounding effects of the treatment programme proper meant that the entire experimental procedure had to be compressed into a period of time immediately prior to the commencement of that treatment programme. However, at the other extreme of this time frame (prior to the first assessment) were factors surrounding participants' transfer to the Unit: individual sentence lengths, uncertain transfer logistics and bed-space availability within the unit meant that the composition of the participant pool was determined entirely by who happened to be available at the time. These factors also tightly constrained the time available for involving participants in the reconditioning treatment procedure itself: to allow for the multiple base-line framework to be maintained, the design utilised four-week blocks as time intervals between the multiple assessment points, including the treatment phase. This four-week (8 treatment sessions) phase is of course considerably shorter than has been recommended elsewhere (e.g., Abel et al., 1984). The implications of this time frame, particularly for the efficacy of the treatment procedure, have been discussed above.

Though the generalizability of the findings may be limited by the small pool of eligible participants from which the sample was drawn, the ultimate composition of the treatment groups was certainly governed by factors independent of possible experimenter bias. Selection can therefore be considered "random", from a methodological perspective. Few differences were apparent in the composition of the three groups, with only mean age approaching significance (and there is no theoretical or logical reason to suppose why, outside of age-related variables such as length of offending history, age *per se* should have a differential effect on results). It might be said that the sample size in this study was relatively small, perhaps in relation to the "magnitude" of the question it sought to answer. However, thirty

participants in a study of this type is a vast improvement over what has gone before - almost all previous studies have utilised less than half a dozen participants.

There were also, as has been described above, difficulties in assuring treatment compliance. It is not known with certainty that the participants at all times carried out the procedure correctly. Though some checks on compliance were instituted, these were by no means watertight. Hence, participants may have deviated in a variety of ways from the prescribed instructions for the treatment procedure. It is possible then that the treatment outcome data are not an accurate indication of the efficacy of standardised treatment procedures. However, to date there do not appear to be available ethically acceptable means to ensure that a procedure, involving as it does genital masturbation, is performed in a manner that conforms accurately to the prescribed form.

Future Directions

The present study has not furnished evidence that directed masturbation, used in conjunction with verbal satiation, is an effective procedure for enhancing sexual responsiveness of child sex offenders towards adult partners. If anything, the effect demonstrated was diminished responsiveness. Thus there is a need for further evaluation of this procedure, perhaps ideally in a study that specifically targets adult arousal alone. If such a study were conducted, an enhanced approach to that employed here seems indicated. A greater number of treatment sessions, and additional input such as the provision of adult erotica, might increase the likelihood that sufficient time was allowed for genuine conditioning to occur, and that arousal was in fact being paired with adult stimuli.

As has been mentioned above, perhaps the greatest problem faced in conducting a

study of this kind is ensuring treatment compliance. The procedure calls for participants to masturbate to orgasm using appropriate sexual fantasies of adult partners, then to repetitively verbalise their deviant fantasies while in a refractory state. Obviously the procedure will be (at best) ineffective if participants reverse these conditions. Though it is unlikely that anyone would be motivated to repetitively verbalise adult fantasies while refractory, the opposite (masturbating to deviant fantasies) is not at all improbable. Hence, a method of ensuring compliance with the prescribed procedure appears vital. It is a challenge for future researchers and clinicians to develop strategies that do not also interfere with the (desired) conditioning effect (as is the case, for example, with having participants verbalise appropriate fantasy).

In regard to satiation, the procedure implemented here does appear to create the desired effect, but not to a sufficient extent. Hence modifications to this procedure appear necessary also. Longer (e.g., 30 - 60 minutes) practice times, and a greater number of sessions over a longer (8 - 20 weeks) treatment phase are probably necessary to achieve a positive effect that is more robust.

Further, a study of the present variety would ideally include a longer follow-up period than the single post-treatment reassessment. While it is of interest to know the extent to which the treatment procedure reduces deviant arousal while the offender is in prison, of greater interest is the question of whether any reduction achieved at this point is sustained following a return to the community. Within this study however, additional phallometric assessments of arousal would necessarily have occurred after participants had exposure to the extensive treatment programme which followed their involvement in the study; hence, their responses at that time might have been influenced by other variables (for example, some offenders report that victim empathy training - a regular component of the full treatment programme - has a markedly dampening effect on their ability to become aroused to deviant fantasies).

Future research might utilise participants assessed as requiring this type of treatment alone and who, after being exposed to adequate treatment, were followed up and reassessed phallometrically subsequent to release.

It may be that the shortcomings of phallometry are of such a magnitude that perhaps the time is nearing when it must be abandoned as a routine assessment procedure with sexual offenders. The ease with which responses can be subjected to voluntary control, and the multiple sources of instability imply unacceptable levels of unreliability. If so, there is a need to develop alternative methods of measuring offenders' sexual interests. The difficulties that any such assessment must circumvent are major. The variable of interest here is highly subjective (at least in part), specifically sexual in nature, and one which the assessed person ordinarily is likely to be motivated to conceal. Hence, the assessment approach that offers an advantage over phallometry must be relatively immune to voluntary control, and must be closely related to sexual interest. On the other hand, there remains the question of whether phallometry is in fact measuring anything of value in regard to sexual offenders' propensity to molest children. It may well be the case that the critical variables in determining risk of future offending, rather than deviant sexual preference, are more temporally unstable and situationally specific features such as offenders' mood states, fluctuating levels of empathy for children, specific cognitions and beliefs about sexually abusive behaviour, and patterns of fantasy.

Sexual fantasy *per se* is probably an important stepping stone on the pathway offenders take towards relapse, and the development of strategies to investigate and measure fantasies is potentially a worthwhile goal. This line of investigation may well identify differences between offenders both in terms of the content and frequency of fantasising, but also in terms of the nature of the fantasy life that offenders have. To illustrate, the self-reports of offenders (admittedly not necessarily a reliable source of information) suggest that differences in fantasy "style" may occur between offenders.

Some admit that they do indeed engage in elaborate fantasies of sexual activity with children, both when masturbating or when idly day-dreaming or observing children. Others report that this is not a feature of their mental lives, but that they have brief, fleeting images that provoke arousal. Others deny engaging at all in fantasy. It may be that such differences are significant, and have implications for how offenders are assessed, and the strategies whereby arousal reconditioning is most effectively carried out. Covert sensitisation, for example, may be uniquely suited to an offender who engages in elaborate fantasies, while some kind of immediate aversive treatment (e.g., carrying a vial of ammonia to be sniffed) may work well for the person who experiences imagery of a more fleeting variety.

Conclusion

This research project is located within a field of research and clinical activity that is motivated by a recognition that the sexual abuse of children, by adults, constitutes a most serious problem in society today. There is now widespread awareness of the enormous costs, to the individual, to families, and to society as a whole, brought about by this problem. Developing effective treatments for sexual offenders, who ordinarily carry a substantial risk of re-offending, is thus an exceedingly worthwhile goal. It inspire some hope to reflect on the fact that what is known about sexual offending, and about the motivations of sexual offenders, has increased exponentially over the past twenty years. This study has sought to add to that knowledge base, by seeking to clarify the effectiveness of treatment procedures that are increasingly being used with men who commit this type of offence. Clearly, a great deal more work is required before a definitive understanding of sexual offenders, and how they are most effectively enabled to desist from further offending, is achieved.

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APPENDIX ONE

CONSENT TO PARTICIPATE IN RESEARCH PROJECT

I, _____ understand that I am being asked to participate in a research project which involves an evaluation of a procedure designed to redirect my sexual interests.

My sexual interest will be measured by recording my erection response while I view sexual slides and listen to recorded sexual materials. This sexual material will be very explicit and will depict various forms of sexual behaviour relating to my problems. While I view and listen to these sexual materials, my erection response will be measured by a small penile transducer, an apparatus that I place around my penis in the privacy of a separate curtained area.

I will undergo reassessment in this manner on a maximum of four occasions over the course of three months.

Following the initial assessment I will be involved in a treatment procedure designed to reduce my deviant sexual interests and strengthen appropriate (adult-oriented) sexual interest. This procedure involves masturbating to orgasm using adult sexual fantasies, then, shortly after orgasm has been achieved, reciting aloud my deviant fantasies for 20 minutes, using a dictaphone to record these. The therapist will listen to the recorded tapes to ensure I am following the procedure correctly.

The results of the assessment and the ensuing treatment procedure will be communicated to me by my therapist. In addition, all information gained by the psychologist conducting this project will be subject to the usual rules of confidentiality practised by Justice Department psychologists as dictated by the New Zealand Psychological Society's Code of Ethics.

All of my questions about the above assessment and treatment procedure have been answered to my satisfaction by the person in charge of my project. I understand that my involvement in this project is voluntary and that I can withdraw at any time.

My signature indicates I have read, understand and consent to all of the above.

.....
Client

.....
Date

.....
Psychologist

.....
Date

STRUCTURED INTERVIEW SCHEDULE

SURNAME: _____ FIRST NAMES: _____ DOB: ____/____/____ AGE: _____

OFFENCE-RELATED DETAILS:

- | | |
|---|---|
| <p>1) CURRENT OFFENCE(S) (tick):</p> <p>() Murder/Manslaughter;</p> <p>() Sexual violation/rape;</p> <p>() Attempted sexual violation/rape</p> <p>() Assault with intent to commit sexual violation/rape;</p> <p>() Sodomy/anal intercourse;</p> <p>() Unlawful sexual connection/unlawful sexual intercourse;</p> <p>() Indecent assault/indecent act/permitting or inducing or procuring an indecent act;</p> <p>() Incest;</p> <p>() Non-sexual offence.</p> | <p>4) NUMBER OF CONVICTIONS FOR OTHER MAJOR OFFENCES:</p> <p>Specify _____</p> |
| <p>2) LENGTH OF CURRENT SENTENCE:</p> <p>Specify number of months _____</p> <p>() Preventive Detention;</p> <p>() Life.</p> | <p>5) GENDER OF CHILD VICTIMS OF SEXUAL OFFENCES:</p> <p>1. Male;</p> <p>2. Female;</p> <p>3. Both.</p> |
| <p>3) NUMBER OF PREVIOUS CONVICTIONS FOR <u>SEXUAL</u> OFFENCES:</p> <p>Specify _____</p> | <p>6) AGE OF MOST RECENT VICTIM(S):</p> <p>Specify _____</p> |
| | <p>7) OFFENDER'S PREFERRED VICTIM GENDER:</p> <p>1. Male;</p> <p>2. Female;</p> <p>3. Both.</p> |
| | <p>8) OFFENDER'S PREFERRED VICTIM AGE:</p> <p>1. 0-5 years;</p> <p>2. 6-11 years (pre-pubescent);</p> <p>3. 12-15 years (pubescent);</p> <p>4. Indiscriminate.</p> |

<p>9) RELATIONSHIP OF OFFENDER TO VICTIM(S):</p> <ol style="list-style-type: none"> 1. Natural father; 2. Stepfather/adopted father; 3. Foster father/defacto father; 4. Grandfather; 5. Uncle; 6. Brother/stepbrother; 7. Cousin or other relative; 8. Unrelated, but known to victim; 9. Unrelated and unknown to victim. 	<p>14) USES OR HAS USED PORNOGRAPHY:</p> <ol style="list-style-type: none"> 1. No; 2. Minor; 3. Occasional; 4. Frequent.
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<p>10) NUMBER OF VICTIMS OVER OFFENDING CAREER (OFFENDER'S AND/OR THERAPIST'S ESTIMATE):</p> <p>Specify _____</p>	<p>15) HAS HAD TREATMENT FOR SEXUAL BEHAVIOUR PRIOR TO PRESENT <u>ARREST</u>:</p> <p>1. Yes 2. No</p>
<p>11) OFFENDING CAREER COMMENCED PRE-ADULthood (AGE 20):</p> <p>1. Yes 2. No</p>	<p>16) OTHER PARAPHILIAS:</p> <ol style="list-style-type: none"> 1. Rape; 2. Sado/Masochism; 3. Fetishism; 4. Voyeurism; 5. Exhibitionism; 6. Transvestism; 7. Bestialism; 8. Other <p>(Specify): _____</p>
	<p>SOCIAL HISTORY:</p> <p>CHILDHOOD/ADOLESCENCE</p>
<p>12) DURATION OF OFFENDING CAREER (YEARS):</p> <p>Specify _____</p>	<p>17) ETHNIC ORIGIN:</p> <ol style="list-style-type: none"> 1. European 2. New Zealand Maori 3. Samoan 4. Cook Island Maori 5. Niuean 6. Tongan 7. Chinese 8. Indian 9. Other <p>(specify) _____</p>
<p>13) SEXUAL ORIENTATION (ADULT):</p> <ol style="list-style-type: none"> 1. Heterosexual; 2. Bisexual; 3. Homosexual. 	

18) WAS SEXUALLY ABUSED AS A CHILD:

1. Yes 2. No

If Yes, gender of abuser(s):

1. Male;
2. Female;
3. Both.

If yes, relationship of abuser(s):

1. Natural father;
2. Natural mother;
3. Stepfather;
5. Stepmother;
6. Brother;
7. Sister;
8. Other relative;
9. Non-relative;
10. Stranger.

If yes, abuse was

1. Single incident(s)
2. Chronic

19) EDUCATIONAL LEVEL OF ATTAINMENT:

1. Primary only or less;
2. Form 3-4;
3. Form 5
4. School Cert;
5. Form 6;
6. UE
7. Form 7;
8. Polytech diploma/Teachers College;
9. University undergraduate;
10. Bachelors;
11. Masters/Post-grad. Diploma;
12. PhD.

SOCIAL HISTORY: ADULthood 178

20) MARITAL STATUS:

1. Never married;
2. Married, first time;
3. Remarried;
4. Separated;
5. Divorced;
6. Widowed;
7. Defacto relationship.

21) SEXUAL DYSFUNCTION:

1. None;
2. Premature ejaculation;
3. Retarded ejaculation;
4. Impotence;
5. Other (specify)

22) OCCUPATIONAL LEVEL:

1. Professional/managerial;
2. Other white collar/farming;
3. Clerical/sales;
4. Trades/skilled labourer;
5. Labourer/unskilled;
6. Unemployed
7. Sickness/invalid/DP Beneficiary

23) ASSESSED IQ:

Specify score: _____

APPENDIX 3

PHALLOMETRIC ASSESSMENT PROCEDURE INSTRUCTIONS

A) BEFORE RESIDENT ARRIVES:

1. Switch on all equipment (plethysmograph, disk drive [ensure drive latch is in open position] and screen, slide projector, tapeplayer).
2. Enter resident's seating area, check of projector focus, audio sound level, cover seat in fresh towel.
3. Return to recording equipment; set plethysmograph output level to 2. Remove power lead. Attach clean strain gauge.
4. On computer, make sure disk drive latch is in open position, close drive latch, then log in name "Lab", password "Intra".
5. At menu prompt, hit ENTER then, on menu, type 1 + ENTER.
10. Type in S's name and details of assessment (date, gauge size etc)
11. Bring in resident from waiting area.

B) AFTER RESIDENT ARRIVES:

1. Seat resident in chair next to recording equipment, welcome, then discuss assessment.

Issues to discuss: (should take 5 - 8 minutes). *"What we are trying to do here, Joe, is get an indication of your sexual arousal responses. It is part of our overall assessment: you will at some later stage have a number of individual interviews, also pencil and paper questionnaires, and together these things all form part of our assessment of you. What we are trying to do is get as clear an understanding of you, as an individual, as we can. This is just one way that we get a full picture of how you function. This will enable us to help you in treatment. The assessment is very routine, it's done in most sex offender treatment centres, I accept you may find it to be a bit embarrassing, but just relax, it's no big deal."*

What's going to happen is that, after we finish talking, I'll get you to go next door, where you will be shown, on the screen, pictures of nude men and women, boys and girls, and while you look at these, you will hear stories of sexual activity.

During this you will be wearing strain gauge (hold up to see) which you will place around penis, this allows me to understand what it is that turns you on; as you get aroused the gauge stretches, and that shows up on this gadget (demonstrate plethysmograph needle varying); the equipment is very sensitive and picks up the most tiny changes.

2. Demonstrate fitting of strain gauge: *"When you go next door, I want you to take your trousers and underpants down to around ankles, then sit in the reclining chair, legs apart, and attach gauge to penis, (slip gauge over index finger held in position of penis), about half way along with black bridge on top, don't roll the gauge along shaft, you can stretch it a bit don't stretch it too much or you could break it, keep some slack wire near to the gauge so it doesn't stretch, and keep your hands on the arm rests during assessment. Now when we first start I need you to get a full erection, and to do this you will need perhaps to touch your penis a bit: this is so I can set the instruments correctly for each individual; after this first stage, though, I don't want you to masturbate.*
3. Give instructions re responding: *"I want you to keep your eyes on the screen in front of you at all times and to listen to the stories, and imagine as well as you can that it is you in the story, and that you are doing the things described in the story. I want you to allow yourself to respond as naturally as you would if, say, you were at home by yourself watching a video: I don't want you to try and stop yourself getting aroused, but don't feel you have to "pump it up" if it isn't there; just allow yourself to respond naturally. I know you won't feel good about getting aroused to some of these things, but don't worry about it, we expect that you will get aroused, after all you haven't been treated yet, and it will help us to be more effective in treating you if we have a clear picture of what the existing pattern of arousal is".*
4. Ask resident what he thinks his response is likely to be and why; if anxious, reassure, etc. Ask for any questions.
5. Ask if resident has ever had or currently has a sexually transmitted disease or any symptoms of STDs.
6. Ask if resident wears glasses, if yes has he got them with him, if not, go and get them.
7. Have resident read and sign consent form. If resident is unable to read, therapist is to read the consent form out. Amend statement on consent form regarding having read the form.

8. Show resident to seat and thread strain gauge through curtain, and through arm rest of recliner.
9. Close door, and return to recording equipment.

C) ASSESSMENT

1. Observe plethysmo recorder as resident is attaching gauge: if gauge is being fitted correctly, needle will fluctuate wildly;
2. Ask resident if the gauge is fitted and if so, if his penis has swelled at all by putting gauge on; if no proceed, if yes, wait till resident reports return to baseline.
3. Hit RESET on plethysmograph and ENTER on computer
4. After 5 seconds of recording, press spacebar and at Main Menu, select option 5 (Reset presentation time) and set to 4 minutes
5. After return to Main Menu select 2 (+ ENTER) then video no. 7 or 9 (dep on sexual orientation)
6. Ask resident to get full erection *"What I need you to do now Joe is to get a full erection, a full hard on, you can do this by looking at a slide I will show you; perhaps you could help the process by touching the end of your penis with your fingers, but try not to disturb the gauge; give me a yell when you think you've got there"*
7. If erection achieved within 5 minutes (by resident's report) proceed to 8. If not, discontinue assessment and make another appointment. Alternatively, proceed, but request that resident inform you if he does in fact obtain a full erection during assessment.
8. When full erection reported, turn output control on plethysmograph so needle is on 9, press ENTER on computer, wait 5 seconds then press spacebar, then, at prompt, Y + ENTER(x2).
9. Inform resident he can lose his erection, and allow time for detumescence (to at least below 1 on plethysmograph dial).
10. Video menu will appear on screen, select 0 (Ret. to mn menu), from which select 1 (Present Slides). Once Slide Menu reappears, select appropriate slide category (as per list taped to computer screen)

11. Remind resident: *"Now just to refresh your memory, I want you to look at the screen, listen to the story, and imagine that you are the person in the story, and just let yourself respond naturally. OK?"* Commence first slide, and when first audio vignette begins, hit ENTER on computer.
12. At end of this and every subsequent vignette, press spacebar on computer, then, Y + ENTER (x2), then select next stimulus category.
13. If at the end of the stimulus presentation arousal is > 1 on plethysmograph dial, use control to stop tape; allow arousal to fall back to baseline; if this takes longer than 90 secs, engage resident in distracting conversation, or have him do reverse 7s (count backwards from 100 by subtracting 7).
14. If arousal to previous stimulus is < 1 , forward slide, and audio (after 20 secs pause).
15. When next vignette commences, hit ENTER.
16. Continue as for 13/14/15/16 until final stimulus has been presented (#18), at the conclusion of which, from stimuli menu, press 0 ("Return to main menu") from which select 0 ("Exit to DOS")
17. In response to next computer prompt, type: Y + ENTER, then A + ENTER, then ENTER
18. Tell resident *"Joe, we'll end at that point, so slip the gauge off gently and leave it hanging over the arm of the chair, get yourself organised and come on out when you are ready, and take a seat out here".*

D. FOLLOWING ASSESSMENT:

1. Ask resident how he is feeling, how he think it went, did anything surprise him, how he felt about getting aroused to stimuli, why he thinks he didn't respond to stimuli, did he try not to get aroused, any questions, etc.
2. Give very brief summary of results (if requested) assure him that we expect this type of responding, that it will help us to treat him more effectively etc.
3. Show resident out to building exit, and return to lab.

4. Disinfecting procedure: Put on disposable rubber glove, fold towel on recliner and leave on floor by outer door of lab; unscrew strain gauge and immerse gauge end in disinfectant in sink for 10 secs; run under cold water then hang over window hooks (but clear of heater).
5. Replace lid on container of disinfectant, remove and discard gloves. Wash hands and wipe down bench. Make up fresh container of disinfectant after every 4 - 6 occasions.
6. At computer, to final prompt Are you sure? type Y + ENTER.

Rolleston Special Unit
Laboratory Assessment Data

Name : N

Date : 21/12/91

Gauge Size : 75mm

Stimulus Description -----	Response in mm		Base-line Increment		Latency to Peak in Seconds -----
	Peak -----	Mean -----	Peak -----	Mean -----	
Stimulus 1 Video : Hetero Adults-Genital.....	121.2	120.9	34.6	34.3	0
Stimulus 2 Slide : Adult Female.....	120.6	107.5	34.1	21.0	101
Stimulus 3 Slide : Pubescent Female.....	121.2	107.1	34.6	20.6	102
Stimulus 4 Slide : Pre-Pubescent Male.....	96.7	94.3	10.2	7.8	108
Stimulus 5 Slide : Pubescent Female.....	121.2	113.0	34.6	26.5	91
Stimulus 6 Slide : Adult Male.....	101.3	95.1	14.8	8.6	124
Stimulus 7 Slide : Pre-Pubescent Female.....	99.3	96.3	12.7	9.8	62
Stimulus 8 Slide : Pubescent Male.....	105.9	96.1	19.3	9.6	123
Stimulus 9 Slide : Adult Female.....	121.2	112.8	34.6	26.3	90
Stimulus10 Slide : Pre-Pubescent Male.....	94.2	92.4	7.6	5.8	119
Stimulus11 Slide : Adult Female.....	120.6	109.8	34.1	23.3	96
Stimulus12 Slide : Pubescent Male.....	110.0	98.3	23.4	11.8	133
Stimulus13 Slide : Adult Male.....	101.3	95.9	14.8	9.4	97
Stimulus14 Slide : Pubescent Female.....	113.0	100.6	26.5	14.0	118
Stimulus15 Slide : Pre-Pubescent Male.....	102.8	95.5	16.3	8.9	115
Stimulus16 Slide : Pre-Pubescent Female.....	102.3	95.2	15.8	8.7	13
Stimulus17 Slide : Adult Male.....	96.2	93.7	9.7	7.1	104
Stimulus18 Slide : Pre-Pubescent Female.....	117.1	102.1	30.5	15.6	117
Stimulus19 Slide : Pubescent Male.....	106.4	96.5	19.9	10.0	117

AVERAGE RESPONSES

SLIDES

	Pre-Pubescent		Pubescent		Adult	
	Female -----	Male -----	Female -----	Male -----	Female -----	Male -----
PEAK	19.7	11.4	31.9	20.9	34.3	13.1
MEAN	11.3	7.5	20.4	10.4	23.5	8.4

APPENDIX FIVE

Participant Treatment Instructions

You will have prepared in advance a list of child-sex fantasy ideas/images for reconditioning. These fantasies should be the images that are most arousing for you, and most likely to come to mind when you are fantasising about children. Your list should consist of at least 10 distinct images.

You should also prepare a set of appropriate adult fantasies, based on your own preferences, or on material available to you. Don't be discouraged if initially you don't feel very aroused by these.

Practice procedure only at times when you are alone and can be sure you will not be disturbed (eg after lock-up). Ensure there are no distractions going on (TV, radio).

Step 1: Using self-stimulation (masturbation), bring yourself to orgasm/ejaculation, using your fantasies of adult partners.

Step 2: Immediately after orgasm, tidy yourself up, wait 60 seconds or so; make sure your hands are clean and dry before using recorder. Do a sound check on the tape-recorder: if you can hear yourself clearly, rewind, and begin. First, briefly describe the scene (eg "I am in a bedroom with a girl who is 10 yrs old; she is sitting on my knee"). Then, speak out loud, into the tape-recorder, your sexual fantasies involving children.

Try to make the fantasy or mental image as vivid as possible; in other words, don't just speak the fantasy out loud, but try to make it a real fantasy in your mind.

Step 3: Continue doing this for a minimum of 20 minutes. Keep on repeating the fantasies out loud, over and over, for as long as it takes to get very bored and irritated by them, then carry on doing it for a minute or so more. Then move on to another fantasy. Your tape should sound something like this:

"I am looking at her small breasts and her pubic hair; I am standing by the bed looking at her breasts and her genitals, I am looking at..." etc, etc, maybe 30 or 40 times. Then, "I am touching her on the vagina and putting my finger inside her; I am lying next to her and rubbing my

fingers on her vagina and putting my finger inside her; I am touching her ...", also for 30 or 40 times, moving in this way from one fantasy idea to the next over the 30 minute period. Keep repeating the image until it becomes totally boring, and then for a minute or so more.

Then move on to another image. It is essential that you do not move on to another image until the one you are working on becomes extremely boring/annoying. Your tape should have no more than five individual images on it, or as few as one.

Do not stop verbalising any individual fantasy until the point of boredom or irritation has been reached.

Don't read the fantasies from the list; also, vary the language a little each time, using your own words.

Step 4: Once you have completed at least 20 minutes of tape (it may be longer), switch the recorder off, remove the cassette and hand it in to the psychologist the next day. He will check it and return it to you with ideas on how you can improve the technique. In total, you will be expected to hand in two completed tapes each week over the next four weeks.

Step 5: Write, on the self-monitoring form, the details of each session: date, time, how long it took you to reach orgasm with adult fantasies, how long you did the boredom technique for, and any comments that you might have (such as problems or concerns about the procedure).

Practise the procedure at least twice per week, but more frequently if you can. Make sure that, on any other occasion on which you masturbate, you use adult fantasies and not child ones. The more you spend time feeling aroused when thinking about adults, the stronger will be your "adult arousal response".

APPENDIX SIX

PARTICIPANT SELF-MONITORING FORM

[illegible]